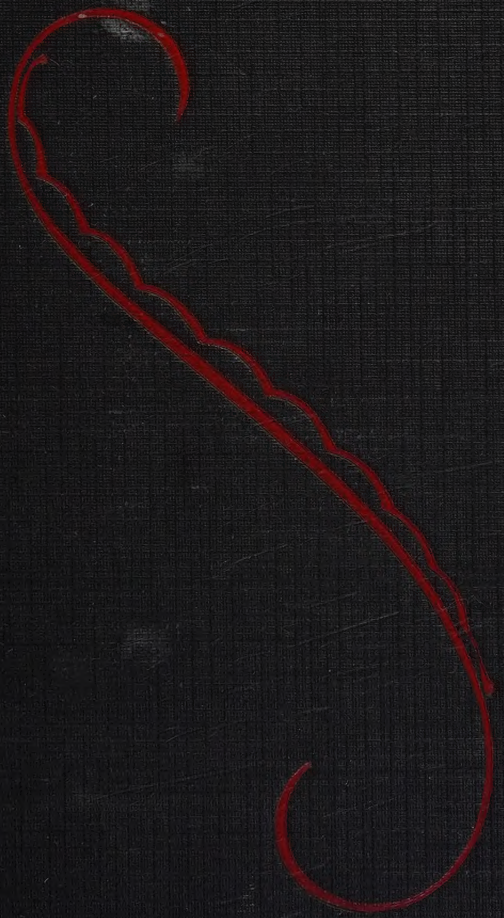
# THE NEW DECALOGUE OF SCIENCE



ALBERT EDWARD WIGGAM

# THE NEW DECALOGUE OF SCIENCE

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# THE NEW DECALOGUE OF SCIENCE

*By*

ALBERT EDWARD WIGGAM

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TO MY WIFE

Whose extensive readings in the literature of biology, psychology, genetics and heredity have alone made this book possible, and whose eyes have for many years largely taken the place of my own, this effort to think about things, instead of fictions, wish-fancies and symbols of things, is affectionately dedicated.

# PREFACE

I am indebted in many ways to many men either through their books or public lectures or through personal letters, stray remarks and casual observations, or else through long continued table talks, sometimes extended into gray morning hours, those priceless hours when men think in each other's presence aloud. In some or all these respects I am indebted to Frederick Adams Woods, Professor Edward L. Thorndike, Everett Dean Martin, Professor John Dewey, James Harvey Robinson, Doctor Irwin Edman, Professor Thomas Hunt Morgan, Doctor Charles B. Davenport, Doctor Raymond Pearl, Professor E. M. East, Professor G. T. W. Patrick, Professor F. C. S. Schiller, Alleyne Ireland, Judge Harry Olson, Professor Franklin H. Giddings, Professor William MacDougall, Professor Karl Pearson, Doctor J. McKeen Cattell and Professor Lewis M. Terman.

Deeper, however, than to any one else, perhaps, is my debt to my boyhood teacher in ethics and philosophy, the late Doctor Daniel W. Fisher, President of Hanover College, whom, although his immense scholarship was largely that of a past age of thought, I still regard with reverence as having been one of the great teachers of the world.

Doctor Glenn Frank, whose career, in my judgment, will be one of the world-events of the coming generation, and who in his genius, scholarship, poise and insight represents the new type of statesman, of whom I have endeavored to write, has kindly read

the manuscript twice and made many invaluable suggestions.

Thanks are due the *Century Magazine* for permission to reprint the brief essay entitled "The New Decalogue of Science," which appeared in the issue of March, 1922, and which forms the basic outline of the present volume. Also to the *Pictorial Review* for permission to reprint from its issue of June, 1923, the chapter on Preferential Reproduction.

A. E. W.

New York City,
October 8, 1923.

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# THE ETHICAL CHALLENGE

# THE NEW DECALOGUE OF SCIENCE

## The New Biology and the Old Statesmanship

TO HIS EXCELLENCY, THE STATESMAN
EXECUTIVE MANSION

Sir: Biology, as Your Excellency I fear is only vaguely aware, is the science of life. It is what we know of living things.

Statesmanship, as you are fully aware, is the art —and we hope may some day be the science—of the control of life.

Now, you control life upon a vaster scale than any other human being. In every field of administration of those affairs which lie beyond individual control, whether in business, industry, education, religion or politics proper, you are the chiefest arbiter of the destiny of the race. More than any other member of the community you determine who shall secure food, and who shall starve; who shall secure clothing and shelter, and who shall freeze; who shall obtain life's opportunities—its education, its social and economic rewards, and who, in these respects, shall fail; in short, who shall survive and who shall perish in the struggle for existence. In a

real sense you determine the very trend of human evolution. What you think, therefore, and say and do about life is the most important thing in the whole world.

Yet, Your Excellency, I venture to address you personally in these pages, because there are now on the shelves of our libraries at least five or six thousand volumes and special investigations dealing with this subject of life of which, I regret to say, it seems you have never even heard. They represent the experiments upon life and the best thinking of many of the world's greatest minds and noblest spirits for the past one hundred years. Since your own task is so extremely difficult and since you are dealing with precisely the same problem as are these men, it would seem that you could be of mutual service. You could immensely aid the biologist, and he believes that, after a hundred years of toil, he is now able to aid you. Every act of yours is freighted with such incalculable human destiny that it would seem, in ordinary humanness, of which your heart is so full, that you, your colleagues, your cabinets, chancellories, legislators, would all be waiting with bated breath for every one of these great new insights into nature and human nature, these new solutions of your own most pressing problems to pour from the laboratory.

Above all, when you witness daily the marvelous benefits in comfort, food, clothing, shelter, transportation, wealth, health and longevity, which science in all its forms has brought to you and to your con-

stituents, it would seem that you would seek earnestly to adopt for your own work at least the spirit and method, the life and view-point by which all these blessings have been achieved. Their danger lies in that they may increase the speed of life but not its tide and volume, its movement but not its cubic content, its swiftness but not its momentum. If you do not gather this new spirit and method, if you do not then apply it with decision and intelligence not only to wealth but to life, science, instead of bringing Utopia, will surely bring chaos. All this sense of progress will be merely a biological joy-ride with hell at the next turn. If I am mistaken in saying that you have never even heard of these numerous volumes about life, I am not mistaken, I think, in saying that they have had singularly slight influence upon your policy and action.

Your public utterances, but not your political, economic or social structure and procedure, reveal however that you are familiar with some Ten Commandments which God wrote on tables of stone and gave to one of your predecessors as the true chart of statesmanship. He later added two supplements known as the Golden Rule and the Sermon on the Mount. Though you know them well, you have failed conspicuously to put these nourishing principles into practise; but what I think will surprise Your Excellency is to learn that God is still doing the same thing. However, in our day, instead of using tables of stone, burning bushes, prophecies and dreams to reveal His will, He has given men the

microscope, the spectroscope, the telescope, the chemist's test tube and the statistician's curve in order to enable men to make their own revelations. These instruments of divine revelation have not only added an enormous range of new commandments—an entirely new Decalogue—to man's moral codes, but they have supplied him with the technique for putting the old ones into effect.

Men have never been really righteous because they did not know how. They could not obey God's will because they had no way of finding out what it was. The spirit of the old commandment to love thy neighbor as thyself was right, but how could a man love his neighbor intelligently when he did not know what was good for him? The Good Samaritan bound up his fellow traveler's wounds, but doubtless left them full of microbes and thus probably killed him. The Good Samaritan on the Road to Jericho and the Good Samaritan on Broadway live in two different moral worlds. "Give a cup of cold water to your neighbor" was a precious admonition, but modern science sternly asks, "Are there any colon bacilli in it?" "Multiply and replenish the earth" was a counsel of perfection when there were only eight people on the globe, but when there are two thousand millions it gives even the rhapsodist pause. Especially, the biologist would like to know what sort of stock the earth is to be replenished with. He has found that many who multiply the most have not sufficient intelligence to add. And so one could run through all the great new cate-

gories of modern conduct. Your own imagination will suggest that the range of ancient moralities for a tribe can not suffice for the ethics of a planet. Not only that, the biologist has discovered that often apparently the noblest ethics for the born, work disaster to the unborn. It is not a personal nor tribal nor immediate morality, but a planetary, cosmic, generational, protoplasmic ethics that alone will make men really righteous.

It is, therefore, no extravagant assumption but the surest deduction from science itself that science only can supply mankind with the true technology of the will of God. If His will is ever to be done on earth as it is in Heaven, it will have to be done through the instrumentalities of science, that is through the use of intelligence. Conscience will have to look through the microscope if it ever sees its duty aright. The most earnest sense of duty will not supply men with the true objectives of that duty. The "spirit of Christ," which we are glibly told will suffice for salvation, is majestic in its impulse and in its objective, but sadly lacking in any technique for connecting the two. It points truly the "steep and thorny path to Heaven," but it supplies no engineering details for making the ascent.

In fact man is either on his way to new scenes and changes, new varieties of untried being or else he is in fearful danger of falling into naught. For as old Cato cried from his prison walls, "If there be a power above us, and that there is, all nature cries aloud through all her works, He

must delight in virtue. And what He delights in must be happy." But again he cries, "When or where?" Science answers, "Here and now, or nowhere and never." This world was not, as Cato said, "made for Cæsar." It was made for the common man. Indeed, so far as science knows, this world was not made *for* anything. It simply is. It is simply here for this organic creature man, himself, who is the outcome of its multitudinous but friendly forces, to make it a congenial decent home to live in, love in, marry in, rear his children in, and die in. So far, except in limited areas and for brief moments for a few people it has never been fit for any of these things. For most people it has been merely a place to fight and freeze and starve in, with a snatch now and then of wine and poetry and song. It may always be so. It may be that man's only hope is to "grunt and sweat under a weary life" on the bare hazard that another world will right the ills of this. But science is lighting the world with a different faith, a belief founded on knowledge, that this world, too, can be made clean and sane and happy. If man can not clean up this world with the stupendous cosmic engine of science now in his hands he does not deserve another. He will have to receive it as a pittance because somebody else "atoned" for his foolishness.

But the scientist can not be daunted with the failure of one generation or even one age. He looks to the long results of time. His old geology has taught him patience. But he believes that man will

cease looking solely to the hills which the Psalmist intimated was his only source of help, and look closer about him and within him into his own psychology and biology in order to aid whatever help may come from on high. This does not mean necessarily that what lies upon and beyond those hills has ceased to stretch a friendly hand to the heart that trusts them. The scientist knows that beyond them are many things not within his ken. He knows, as the mystic can not know, that beyond them lie nobler mysteries and finer adventures of the spirit than the mystic has ever dreamed. But the things that lie beyond he believes are as friendly as those he has found on this side. Consequently without troubling he trusts them. He believes they are on the side of intelligence. Instead of believing that religion is merely "morality touched with emotion," and that such a religion will furnish a ready made science of society, he believes that intelligence touched with emotion is the only guide to morality. That kind of morality touched with emotion is religion. And that kind of religion and only that kind will induce men to clean up this world, instead of letting its filth accumulate in the belief that man's stay here below is too short for it to be worth while to make the place decent. Men have been dominated by this belief for ages with the obvious result that religion and morality have scarcely progressed beyond the Stone Age. We are still in the Stone Age of ethics. As John Dewey in substance asks, where is our science of society—our moral adjustments of men to

one another—comparable to our progress in chemistry or physics? There simply is no such progress, there is no science of society, because men have not known how to behave toward one another—have not known until this age of science how to be righteous.

But at last, Your Excellency, men do know how to be good. Science has supplied them with a true technique of righteousness. The time has arrived for a new Decalogue, a new Sermon on the Mount, a new Golden Rule. These new codes of conduct have none of the absolutism of the old. They are fluid as evolution, flexible as human nature. Yet the new dispensation is just as divine, as sacred, as inspired as the old. It is filled with warnings of wrath, both present and to come, for the biological ungodly, as well as with alluring promises for them who do His scientific will. These warnings should first make you tremble; they should, secondly, make you pray; they should, thirdly, fill you with the militant faith of a new evangel.

# THE FIVE WARNINGS

## THE FIRST WARNING

### That the Advanced Races Are Going Backward

The first warning which biology gives to statesmanship is that the advanced races of mankind are going backward; that the civilized races of the world are, biologically, plunging downward; that civilization, as you have so far administered it, is self-destructive; that civilization always destroys the man that builds it; that your vast efforts to improve man's lot instead of improving man are hastening the hour of his destruction; that the brain of man is not growing; that man as a breed of organic beings is not advancing; that microbial diseases are chiefly the by-products of our civilizations; that these microbial diseases are apparently decreasing, while at the same time man's incapacity to resist them is probably increasing; that the great physiological diseases of man's body—heart disease, Bright's disease, diabetes, cancer, degenerative diseases of the arteries, liver and central organs—are increasing; that the functional neuroses, the diseases that affect man's mind and behavior—neurasthenia, hysteria, epilepsy, insanity and the multiform minor mental and nervous derangements of function—are probably all increasing; that weaklings, paupers, hoboes and imbeciles are increasing;

that leadership and genius—great men and first-class workmen—are decreasing.

Lest Your Excellency may gain the impression that I merely wish to alarm you, let me urge you to glance at the chart of your own national biology. You recently called the picked youth of your nation to the colors and found that practically one-third of them were physically unfit to defend their country. Some of their defects could be remedied by surgery or hygiene, but Dr. Eugene Lyman Fisk, Medical Director of the Life Extension Institute of New York, after extended statistical analysis concludes that "the total rejection rate for physical reasons would lie between thirty and forty per cent., and this at the most favorable age group," that is, from age twenty-one to thirty-one.

In the most extensive analytical survey ever made of our national physical assets, one conducted by Doctor Fisk, in collaboration with the American Engineering Societies, and at the suggestion of Secretary of Commerce, Mr. Herbert Hoover, just published under the title *Health Building and Life Extension,* this conclusion is expressed: "So far from the draft records giving an exaggerated impression of the degree of physical deficiency that prevails in the general population, it is clear that they convey an under-estimation of the true conditions. So far as they go they may well arouse concern as to the physical state of civilized man, but much must be added for defects unrecorded (by the draft) which may in later life impair efficiency and lower resistance to disease."

The British Military Committee, as quoted by Doctor Fisk, summed up its conclusions on British vitality as follows: "Of every nine men of military age in Great Britain on the average three were perfectly fit and healthy; two were on a definitely infirm plane of health and strength; three could almost with justice be described as physical wrecks; and the remaining man as a chronic invalid." Doctor Fisk further states it as "the thesis of his book" that there has already shown up an increasing death rate for men and women who have reached the age of forty and even of thirty-five.

Examination of large, apparently healthy groups of men and women in both industrial and commercial life by the Life Extension Institute discloses at least fifty per cent. in need of medical or surgical attention. Mr. E. E. Rittenhouse, actuary of a prominent life insurance company, states that "diseases of the heart, circulation and kidneys have apparently increased in our registration states more than one hundred per cent. since 1880." Mr. J. K. Gore, in 1916, at that time president of the Actuarial Society of America, stated as his conclusion that "the death rate is increasing at the higher age periods and that the death rate from diseases of the circulation and kidneys had increased within this generation by fifty per cent." While on the other hand the most extreme conservative, Frederick I. Hoffman, a distinguished statistician, believes this increased mortality rate is not yet a national menace, yet he states, as quoted by Doctor Fisk,

"that affections of the circulatory and urinary organs are decidedly more common in a fatal form in early old age than would seem necessary" in the light of modern preventive measures.

You also examined by the latest psychological methods nearly two million of these picked young men for the army to ascertain their mental alertness or proficiency. You have also within the past few months examined by much more highly refined and careful methods, through your educators, some two million school children. While just what phases of the physio-psychological make-up of human beings these tests do measure is still under dispute by those most competent to carry on such a controversy, yet the results of testing these two great cohorts of individuals are in the main mutually harmonious and supporting. The majority opinion of these competent students seems at this date safely to be that they did to an encouraging degree separate the natural quicks from the natural slows—those who had the inborn ability to learn slowly or quickly, at least in the two fields of mentality, namely, abstract and mechanical thinking.

Prof. Edward L. Thorndike, of Columbia University, one of the wisest of living men and a leader in this field, suggests that the human mind is made up of three fairly distinct intelligences, the mechanical, abstract and social. One might think also of adding two others, the musical and artistic. While they all overlap, yet there are marked differences among individuals, in the relative prominence of the

three types of intelligence. The abstract and mechanical intelligences were probably much better evaluated by these tests in the army than was the social intelligence. The general moral qualities, such as determination, docility, cooperativeness, doggedness and what Prof. June Downey, a pioneer in experimental measures of the emotions, calls the "will-temperament complex," were not accurately measured in the soldiers, although they were somewhat more accurately delineated among the school children.

However the proof first furnished in 1906 by Frederick Adams Woods, the American biologist, that mental and moral qualities are strongly knit together in man's hereditary constitution, has been followed by abundant proof that all good qualities tend to be associated in mortal make-up. Consequently the mentally alert were beyond question on the average the morally sound. The executives and moral leaders were not found among the C minus, D and E classes in mental quickness. As a result the most exhaustive measurement will probably never very radically change the general curve obtained by the army measurements. No one has ever claimed, as wrongly inferred by some hasty journalists, that these tests measure intelligence uninfluenced by environment or education. However, the most competent students believe that the largest element measured was native intelligence and that this intelligence is very little subject to increase by education although proficiency in using it is enormously increased.

Intelligence appears to me to be the thing that enables a man to get along without education. Education appears to be probably the thing that enables a man to get along without the use of his intelligence. Once a new situation is comprehended by the intelligence it is thereafter largely carried on by the education developed from the experience. Many other definitions could be given of the word intelligence, but if here we limit it to the inborn capacity of a man to meet a new situation, education likely has little influence in increasing it. It is doubtless an inherited character the same as any physical character, as abundant evidence has been collected to prove.

I regret lack of space for continuing this discussion in detail, but keeping these qualifications in mind, the novel situations presented by these mental tests or mental alertness tests, aid us to tell *which individuals possess intelligence* and, for most practical purposes, how much intelligence they possess as compared with their fellows. No one knows how much a watt of electricity is nor how much a pound of steam, but engineers know what each will do, and can compare their relative power. Consequently in comparing men with each other as to what they can do and will do, the tests are a most effective and satisfactory instrument even in their present undeveloped state.

Thus, after making all possible allowances a biologist gains a strong impression from modern mental testing that one of the outstanding re-

sults of civilization is that it has made the world safe for stupidity. A very significant proportion of these adult men could not decide such momentous problems as the following, which are but two out of a large series put to them, and to all of which three ready made answers were suggested by the examiners: "Why are cats useful? (1), Because they catch mice; (2), because they are gentle; (3), because they are afraid of dogs." Another question was: "Is it wiser to put some money aside and not spend it all so that you may; (1), prepare for old age or sickness; (2), collect all the different kinds of money; (3), gamble when you wish." Many men gave wrong answers and many were compelled to acknowledge their inability to decide such important matters. Since you have thousands of such men and women, each casting a vote upon the most complex national and international problems and each vote equal in weight to those of the editors of the Army Report, and since you consider the voice of these thousands to be the voice of God, it calls into serious question the mental alertness of the latter.

The most conservative interpretation I am able to find is that of Col. Robert M. Yerkes, one of the chief promoters of these tests and an editor of the Army Report—the famous Memoir XV. He concludes that at least fifty million people in this country have not sufficient brains to get through our certified high schools. This would probably indicate that fifteen or twenty million can not go beyond the fourth or fifth grade and the other thirty million of

your less intelligent moiety are scattered along between this point and high-school graduation. Probably eighty-five million, Colonel Yerkes seems to think, will be compelled to stop their cultural education with their high-school diplomas from lack of that *type* of intelligence which from all available evidence seems to be the best for general citizenship. It seems likely from Colonel Yerkes' conclusions that the next ten million can make only moderate college records, and that only the top four million or five million can graduate with any degree of brilliancy and go on into fields of independent, abstract and creative thinking.

It is highly probable, if these estimates be even approximately correct, that fifty or sixty voters out of every one hundred who are constantly clamoring for "more democracy"—which to the unintelligent means more power and not more wisdom—could not possibly understand the theory and workings of democracy if getting into Heaven depended on it.

Of course there is a vast deal of personal goodness and of sound character all along the line, but I am not speaking of the qualifications which will admit a man to the kingdom of Heaven but of those that will keep us out of a hell on earth.

But all these facts of intelligence and physique need not in themselves greatly alarm you. Whatever our intelligence and physique may be it is all we have. I am not at this moment concerned primarily with whether our intelligence is high or low but with its prospective, indeed by your present

methods, its certain decline. The danger to this country is not from its seventy or eighty or ninety millions who may have little or no brains, but from its five or ten millions who have. It may be that to-morrow some necromancy of education or some ectoplasmic injection will transform our twenty or thirty or forty per cent. of social and political dunces into geniuses. But pending that possibility, the psychologist has spread here before you the main materials of democracy. If our estimate of these materials be too high or too low it does not greatly matter. No nation was ever overthrown by its imbeciles. Nature abhors a vacuum and for that reason weeds out the heads of fools. The significant thing is that the fools are increasing and those responsible for their welfare are decreasing.

For you defy nature with your civilization. As President Stanley Hall has said: "Man has not yet demonstrated that he can remain permanently civilized." Or as Sir E. Ray Lankester, the British biologist, has warned you, you have taken evolution out of the mighty hand of nature into your own feeble one. And unless you have the courage and intelligence to go on and complete the task, nature will periodically hurl you back into savagery—the red sea of natural selection—where as he says, she "will wreak upon you the vengeance which she always has in store for the half-hearted meddler in great affairs." Man dare not be a half-hearted meddler in this great affair of his own evolution. He has egotistically taken it into his own hands, and

yet so far has used scarcely more intelligence than would a babe who had had placed in his tiny fingers the cosmic engine that guides the stars.

Evolution is a bloody business, but civilization tries to make it a pink tea. Barbarism is the only process by which man has ever organically progressed, and civilization is the only process by which he has ever organically declined. Civilization is the most dangerous enterprise upon which man ever set out. For when you take man out of the bloody, brutal but beneficent hand of natural selection you place him at once in the soft, perfumed, daintily gloved but far more dangerous hand of artificial selection. And, unless you call science to your aid and make this artificial selection as efficient as the rude methods of nature, you bungle the whole task. And you are doing this on a colossal scale in industrial America.

For your five or ten millions are decreasing, while your eighty or ninety millions are increasing. I wonder if Your Excellency has ever heard of a differential birth rate. I have searched through the utterances of the executives of this and other lands for any intelligent pronouncement upon the subject. All I have been able to unearth are a few letters written by our executives to congratulate the twenty-dollar-a-week parents of a dozen or more twenty-dollar-a week children.

As Huxley pointed out, the character of the birth rate is the prime original basic problem of all politics. Nations have often perished because of a dif-

ferential birth rate. A difference in the total birth force of one class of the population over another of even one-tenth of a baby per family will in a short time alter the whole character and destiny of a people. You have established a difference of approximately a whole baby and a half between your five or ten millions and your eighty or ninety millions.

In addition to this ominous phenomenon you have deliberately introduced within the past two decades, at least two million oppressed peoples of other lands, of lower intellectual ability than your ten million or more negroes already on hand. Prof. Carl Brigham of Princeton, in a book about life which I commend to your immediate attention, entitled *A Study of American Intelligence,* a brilliant interpretation of the mental tests of the army, gives ample evidence that especially the Nordic elements of our population are being forced out by other races whose representatives in this country are of distinctly lower average mental alertness and of less social coherence and political capacity. This race has contributed a vast share of all political wisdom and scientific discovery to the modern world. It is probably the one race on earth which has steadily advanced in these respects for the past several thousand years. Had we invited to our country better representatives of these other races the whole problem would present a different aspect. It would still, however, present many grave difficulties, since mixed races are a menace in the operation of popular government.

Moreover, all modern liberal statesmanship—autocratic statesmanship never makes such an error—has rested its case upon two great sentimental nebulosities, first, that all men are created equal, especially in political wisdom, and, second, that God will raise up leaders unto the people. Well, all men are created unequal in all respects and leaders come not by prayer but by germ cells. Greece has been calling for her galaxy of greatness to return, for two thousand years, but it has not come. The poet Browning thought that if only the ancient Greek language and literature could be taught to her people again they would with loud acclaim enter once more into the spirit of her beauty and the intellectual capacity to reproduce her glory. But, either God has seen fit to chastise her, or, what is more probable, the heredity, the blood, the germ cells from which her leaders sprang have been buried in her enchanting ruins.

Spain has been calling for three hundred years for her lost world influence, but I think Frederick Adams Woods has mathematically demonstrated that her real glory was buried with the blood of her great kings. Evolution is a stern taskmaster that knows no compromise and grants no reprieve. And the biologist can not avoid the apprehension that you are plunging our nation into the same great historic slough of biological despond.

True, even with our present intellectual capacity, social progress is far, far from being at an end. Even a whole race can live upon borrowed social,

though not borrowed biological capital. The ideals of Greece have enriched every social order of the world. The mist of every people's dreams bequeaths a more potent air for men to breathe long after their ambitious marbles have crumbled into dust. Nations have gone through a renaissance and climbed to national excellence without the slightest increase in the mental capacities of the people. But I urge you to reflect that this has taken place only when two things were present, first, those social and economic conditions, customs and ideals which resulted in a high birth rate among the abler stocks, and, second, when their leaders have thought freely and bravely upon both practical affairs and the concerns of the spirit. Without the first being present continuously, the second phenomenon soon runs its course. The final test of democracy is its capacity to breed leaders. Nearly all changes in history have been brought about by babies. Up to a generation ago the outstanding biological feature of our national life was that its abler ten millions produced more babies than its less able ninety millions. I commend to you a brilliant study of this problem by Mr. John Corbin in his significant book, *The Return of the Middle Class.* So long as our sounder middle class breed freely, the tide of any nation's genius will run to the full.

But what have you—the average man in power—actually accomplished with your naive meddling with evolution? Mr. Alleyne Ireland, the publicist, in his *Democracy and the Human Equation*—an-

other valuable book about life for statesmen to ponder—has reached a remarkable conclusion from the researches of Havelock Ellis and Frederick Adams Woods. He states that throughout all English history down to the opening of the period of mass democracy, about 1800, approximately one out of nine national leaders sprang from the laboring classes. During the next twenty-five years this proportion had sunk to practically one out of fifteen. By 1850, when mass democracy had run only the first half-century of its career, this proportion had dropped to well-nigh one out of twenty-two! It is likely now scarcely one in forty or fifty, though nothing but inferential impressions are available. Cattell has shown that in America not a single day laborer's son has become a man of scientific distinction. The wholesale rise of the masses to power may be the death knell of their biological progress. Like a bottle of old wine, which, when uncorked, for a time sparkles and fumes with life but soon becomes inert and stale, so it seems that men, when freed from oppression for a time bubble with genius. But ambition is sterilized by its own success. Indeed without biology as the basis of social processes, success spells failure and achievement brings decay. Like caged animals, those who rise cease to breed. And soon the masses are left in the direst poverty known to man, the poverty of natural leadership. Lincoln thought that the Lord must love common people or He would not have made so many of them. A biologist

is bound to suspect that you had some hand in the process.

You will perhaps pardon a biologist if for the moment your supreme political gesture in this direction during the past seventy-five years in America should touch his sense both of humor and pathos. You have proclaimed that men are born equal in social and political wisdom, and rendered the Constitution largely obsolete in order to develop the machinery to make your faith effective. But you have done this in the name of our fathers, who founded an aristo-republic for carrying on an aristo-democracy and who placed in your hands a Constitution especially designed to frustrate any such ghastly possibility. They had no faith in the people as a mass, and tried by elaborate, even grotesque checks and balances to counteract their passions and nullify their obvious lack of political genius. You have reversed the whole beneficent process with probably profound biological consequences. Yet, true to your habit of assuming Elijah's mantle to cloak your lack of political inspiration, you have done it in the name of the fathers who thought they had put such fantastic projects under lock and key.

The simple fact is that "the most unequal thing in the world is the equal treatment of unequals." Your difficulty is not that men are too unequal, but they are not unequal enough. "There is one point in which all men are exactly alike and that is they are all different." The more you equalize opportunity, the more you unequalize men. Indeed the

whole aim in making opportunity equal is to make men unequal—to draw out and utilize each man's individual capacities, emotions and powers. And you have failed beyond all calculation to make opportunity equal in anything except the privilege to vote upon measures so complex that genius can only partly comprehend them. For, when you give the born hod-carrier, the born poet, the born philosopher and the born statesman similar training and education, similar social and political privileges and obligations, and hold before them similar economic rewards, you have not given unequal men equal opportunity. You have given unequal men the *same* opportunity. You have tried to make the poet a machinist and the astronomer a tinsmith. You have failed utterly in the supreme objective of political mechanics—the equalizing of opportunity. Instead, you have fatuously tried to equalize men.

As a grand net result of this ungodly equalitarianism you have multiplied economic injustice on the one hand and absolutely enforced biological injustice on the other. And these two forms of injustice have set up economic, social, educational, and even moral and religious forces which are rapidly forcing your best blood to the biological wall. These forces are rapidly selecting out the priceless germ cells of your ten million superiors from the national blood stream. From this ten million always have and always will come nearly ninety per cent. of your real intellectual leaders. And once the germ cells of your ten millions are lost nothing is left except

the stern but effective discipline of barbarism until, finally, out of a sea of blood, natural selection can again lift your leaders. In that distant day your ideals, your institutions, your very bones, will be only material to puzzle and delight the mind of the historian and the paleontologist.

## THE SECOND WARNING

### That Heredity Is the Chief Maker of Men

The second warning of biology to statesmanship is brief and simple: that heredity and not environment is the chief maker of men; that it is essentially the man, who in the long run makes his environment, much more than it is the environment which makes the man; that man is not a pawn on the chess-board of environment, the football of circumstance and the puppet of chance and change; that he is not a will-o'-the-wisp of fortune, a marionette whose wires are pulled by the hidden hand of doom; that he is not, as the glib reformer has taught you to believe, the helpless victim of the passing education, philosophy and theories of pedagogy of his time; but that, in the germ cell, from which every man is born, there are resident those powerful personal forces by which he can rise in well-nigh any environment and, within the limits of human freedom, exclaim: "I am the master of my fate; I am the captain of my soul."

The social and political import of this warning is that nearly all the happiness and nearly all the misery of the world are due, not to environment, but to heredity; that the differences among men are, in the main, due to the differences in the germ cells

from which they are born; that social classes, therefore, which you seek to abolish by law, are ordained by nature; that it is, in the large statistical run of things, not the slums which make slum people, but slum people who make the slums; that primarily it is not the Church which makes people good, but good people who make the church; that godly people are largely born and not made; that if you want church members you will have to give nature a chance to produce them; that if you want artists, poets, philosophers, skilled workmen and great statesmen you will also have to give nature a chance to breed them.

You are opposed to this belief. You believe you can make a silk purse out of a sow's ear, get blood out of turnips, find Lincolns in every log cabin by looking hard enough, and get genius out of fools. You believe that the reason one man starts at the bottom of the ladder and climbs up while another starts at the top and slides down is due to the ladder being wrong end up. Science knows it is due, chiefly, to the inborn differences between the climber and the slider. Your environmental remedy is to kick the ladder from under both and put them on the same level. You thus deprive each of any means of rapid and easy transportation to his natural destination.

Your childlike democratic faith that genius is ubiquitous and leadership potential under the most empty pate, waiting only to be called forth by God or a majority vote, dominates three-fourths of your

legislative gestures. The "cult of the incompetent," the belief that incompetency is merely repressed genius, constitutes your credo. Lester F. Ward, perhaps the most dominant sociologist of the past generation, speaks frankly your basic biological naiveté. After informing us, with elaborate descriptive—not analytical—statistics that "genius follows the law of supply and demand," that "genius is everywhere, waiting only to be called forth by economic conditions," (as though your present chaotic economic conditions were not at this moment calling for this "unlimited supply" of genius to come forth and assume its power) Professor Ward, as follows, voices your political biology:

"The only consolation, the only hope, lies in the truth that, so far as native capacity, the potential quality, the 'promise and potency' of a higher life are concerned, those swarming, spawning millions, the bottom layers of society, the proletariat, the working classes, the 'hewers of wood and drawers of water,' nay, even the denizens of the slums—that all these are by nature the peers of the boasted 'aristocracy of brains' that now dominates society and looks down upon them and the equals, in all but privilege, of the most enlightened teachers of eugenics."

No responsible sociologist nor psychologist to-day believes anything of the kind. No biologist ever did believe it. If it is true then we do not know anything. So astute an observer as Jesus evidently did not believe it when He pointed out that some men

have one talent, some two and others five. He also recognized its tremendous practical consequences when He made the five talent man ruler over many cities and dismissed the man of one talent brains and one talent morals from five talent social responsibility. But notwithstanding this great example, you still frequently elect the one talent man to office, and prefer the two talent average to the expert with five. This same Teacher added upon this occasion one of the most manifest rubrics of statesmanship, when He said, "Unto him that hath shall be given." In proof that the Master here spoke one of the profoundest, most far-reaching statements of true biology, and therefore of true statesmanship, may I relate to Your Excellency, a simple experiment?

Prof. Edward L. Thorndike selected a group of people who could solve a certain number of simple problems in arithmetic in fifteen minutes. He then selected a second group who could solve twice as many similar problems in the same time. Following this he gave both groups an equal amount of practise.

The result contradicts all your faith in the equal "promise and potency" of men. The slow group advanced a little, the fast group advanced greatly. In the end, as the direct result of equalizing opportunity, the fast group was further ahead than ever!

No society can be called civilized that does not give all men equal rights and equal opportunities. But it can not give men equal brains. Every man

should be educated and given a chance, but you can only give him *his* chance—the chance of his inborn powers. No system of education can put brains into empty skulls. It can only develop what is there. Even college, as George Horace Lorimer has said, "does not make fools, it develops them." All men come up by education, but "the brighter they are the quicker they come" and the farther they go.

Dull people learn slowly and advance slowly to low positions. Brilliant people learn rapidly and advance rapidly to high positions—so long as you do not, as you often do, put a premium upon stupidity. You fill many of your offices with "honest" but stupid Johns and "faithful Joes" shining with incompetency. But, barring this, the benefit of a rich and varied environment is that everybody, both dull and bright, can advance to much higher positions. It is no paradox to say that environment is all-important and heredity is, likewise, all-important. Both are absolute. But, barring your interference, no social order or economic system can very much change the *relative* positions of men. The bright will always be ahead and the dull will always be behind.

Since nearly three-fourths of your efforts are directed toward reversing this natural order of things, may I ask Your Excellency a few random questions? Why is it that of two brothers under my observation in the same environment, one entered the United States Senate, while the other all his life has conducted a fourth class, small town restau-

rant? Why has one of our greatest publicists an imbecile brother and a wayward sister? Why, of two brothers, reared under the same roof, with the same parental influence, does one become a village loafer and the other a philosopher? Why, out of the first fifty-one names in the Hall of Fame, are ten of them the sons and daughters of preachers? Why is one out of twelve of all the names in *Who's Who,* our most democratic roster of fame, the child of a minister? Is it necessary for me to present proof to you that ministers are on the average men of character and intelligence? Why out of the first forty-six names in the Hall of Fame, have twenty-six of them from one to three relatives of national renown? Does it not argue that they probably belong to great breeds, truly noble strains of blood? Why is it, that if you are born from certain strains of blood you have one chance in five of having a celebrated relative, and if from other strains your chance in this respect is hardly one in a thousand? Why has the Edwards family, living in thirty-three different countries, under differing environments, out of one thousand four hundred members given us one thousand four hundred social servants, many of world distinction, while the Ishmael family, studied by Estabrook, out of approximately fifteen thousand members has given us nearly fifteen thousand social scourges?

We saw it stated but yesterday by one of the foremost political organs of the nation, one which stands for genuine progress, that "there is no

evidence of the inheritance of intelligence." Our biological libraries are filled with this evidence. Either you must admit that you have builded such a grotesque social order that intelligence is no use to a man; or else intelligence, as evidenced by achievement, is inherited. I can not present the highly technical proof, but every biologist knows that intelligence is inherited, energy is inherited, insanity is inherited, emotional possibilities are inherited, a man's inner character is inherited. Environment is important, education is important, moral suasion is important just because intelligence, energy and character are inherited, and for no other reason.

Your fear is that this is not optimistic but pessimistic. Science is not concerned with such words. Its business is to find out how the universe works, in the hope that you will adjust your philosophy to a universe that is, instead of one that is not. But is it optimistic to believe that your fundamental character and intelligence are due to the mere chance that you had a good teacher, read a good book, heard a good sermon or were born in a good town? If so then all the people born in good towns, with good books, sermons and teachers ought to be good. Does your observation confirm this belief? Those born in bad towns and in the slums should all be bad. But do you not constantly see genius and character rising from the mire and folly and degeneracy flourishing in high places? As Hans Christian Andersen said, "It matters not if you were born in a duck pond, provided that you

were born from a swan egg." Again, as Sir Thomas Brown said, "Lift not up thy hands and give thanks to heaven that thou wert born in Athens, but that integrity, nobility and honor lay in the same egg and came into the world with thee."

If a man's character is due to his surroundings then should he happen to fall among thieves, he has precisely the same chance as they of committing murder and getting hung within a week. Moreover, one could not form the slightest idea what sort of a man he may be ten years hence, for he may find himself amid totally different surroundings. War may disrupt the world. But so long as the sound heredity of the race is not destroyed the people will rise from its ashes and build a civilization of polish and grandeur again.

I could cite volumes of evidence, but I urge you to examine at your leisure three lines of proof: first, the Royal Families of Europe, second, the studies made of twins, and, third, the conduct of our Pilgrim forefathers.

It is not necessary to compare the Royal Families of Europe with mankind in general, but Frederick Adams Woods in a noble research has compared them with one another. I commend this study to every student of statecraft. Over a period of five centuries, he finds the geniuses are nearly all grouped together by the bond of close blood relationship; the imbeciles and degenerates are linked by the same invisible bond, while mediocrity, morality, and other striking mental traits occur in the

blood groups as expected. In fact this cautious student concludes that it is perfectly startling how "herdity explains nearly ninety per cent. of the rough outlines of the character and intelligence" exhibited by these privileged persons.

Professor Thorndike and others have by elaborate methods studied the heredity of twins. As you may have observed some of these remarkable beings are almost identical, while others resemble each other very little. When placed under similar environment their likenesses do not increase nor their divergences come closer together. And vice versa under dissimilar conditions those which are born nearly identical remain nearly identical and the divergences among them do not appreciably increase. Professor Thorndike sums up his extensive treatment in these words which should convey a solemn meaning to statesmen: "The facts then are easily, simply and completely explained by one simple hypothesis: namely, that the natures of the germ cells—the conditions of conception—cause whatever similarities and differences exist in the original natures of men, that these conditions influence body and mind equally, and that in life, the differences in modification of body and mind which are produced by such differences as obtain between the environments of present-day New York City public school children are slight." If you are a resident of New York City I think you will agree without argument, that the differences in environment between the children of Fifth Avenue

and those of the lower east side are as great as could well be brought about by any other form of economic anarchy.

Lastly will you contemplate with me the conduct of our Pilgrim forefathers and contrast it with one or two other large scale exhibitions of the original natures of men? The Pilgrims landed in a wilderness and immediately felled trees and from the logs built an academy for training the intellect and spirit. Their descendants have furnished many times as many leaders to the nation as their numbers justify. A startling number of your immigrants of the past generation have devoted themselves to putting bombs under these institutions although their environment was a thousand times better. Another contrast is furnished by the convicts which England sent to a new country at Sydney, Australia. They had as good a "chance" as the Pilgrims, yet they have in one hundred and fifty years succeeded only in building the largest slums in the world.

I have, this moment, had laid on my table by the postman the report of a body of social workers supported by public money. They are devoted to the care, and unwittingly to the propagation, of foundlings. They state with actual hurrahs that heredity doesn't count. They prove this by citing children of *unknown* ancestry who have turned out well!

This is a fair sample of the statistics—God save the word—by which you have always attempted to prove that heredity—man's inner nature, his natural endowments of intelligence and

character—are of no importance in the affairs of men. The Army Mental Tests hardly gave us faith in the "unlimited promise and potency" of the C minus, D and D minus men. For defending your country at least, these were the chief things they lacked. And the thing, astounding to you, but an old story to the biologist, was that they were mainly the sons of C minus, D and D minus fathers and mothers.

"Promise and potency," Your Excellency, are the only hope of a nation, and they are handed down with unerring certainty from father to son. So long as you fill the land with children who possess them, you need have little concern that environment will be neglected. Inner promise and inborn potency are the two things that create a promising and potential environment, and nothing else will. Nations are made and unmade at the marriage altar. No nation can live by heredity alone, nor by environment alone. Both are important, but you have proceeded as though heredity mattered not at all.

Environment *is* important, but rich or poor environment is but the outward mark of the wealth or poverty of either individual or national blood. There are two kinds of poverty, economic poverty and biological poverty. You can not rid the world of either by attending solely to one. So far you have done this. Your educators and sociologists are sweeping far ahead of you. You should follow them. But, heredity is primary and basic to all else. Every statesman who forgets this will perish and carry

his state down with him. But when the statesman makes the clay out of which his people are made, their physical and mental heredity, the first object of his solicitude his nation will weather all the vicissitudes of time. Only such a nation will or can transform its petty patriotisms for national aggrandizement into a passion for national character. Such a true biological patriotism will give opulence to a nation's culture, vitality to its ethics and permanence to its spiritual dominion, because its end and aim will be constantly to elevate the level of its human blood stream and keep its currents rich, regnant and alive.

## THE THIRD WARNING

### That the Golden Rule without Science Will Wreck the Race That Tries It

The third warning of biology is that charity and philanthropy and your noble-hearted but often soft-headed schemes for ameliorating the conditions of life without at the same time improving the quality of life have failed and will fail to improve the human breed and are, in fact, hastening its deterioration.

You are the best hearted man, Your Excellency, that I know. You have a positive passion for doing good. The milk of human kindness actually oozes from your pores. You are willing at a moment's notice to vote any amount of money to relieve the homeless, fatherless and distressed. You gain an enormous number of votes because you are in reality "the poor man's friend." You mean to be his real friend. I am never concerned with what is in your heart, but only with what is in your head. You would like to do well. But hell is paved with similar pious intentions. You should first pave this world with intelligence and light it with wisdom. This is not a task for goodness of heart only, but also for soundness of head.

You should look beyond the next election to the

next generation. It is there that many of your measures will have their greatest effects. You fondly imagine you can speed up evolution with cakes and cream for the unfit. But nature has progressed by letting the devil take the hindmost. Your method is to increase the number of the hindmost. Nature slaughters the innocents, but you merely throw more innocents into her ravenous maw. Your very mercy often only adds to nature's brutality. If there really were enough money to pay skilled people to take care of less efficient people, to care for still less efficient ones, to care for those still lower in the scale and so on *ad infinitum* your scheme would be ideal. Thackeray said there was "no Irishman so poor but that he had a still poorer Irishman living off of him." Your scheme is, indeed, ideal in every point except one—that it won't work. Perpetual motion machines have the same minor defect. They run for a time and are perfect in everything except perpetuity. Gravitation finally takes its toll. So in time will nature take her uttermost farthing from your plan for regenerating the world by coddling the incompetent. You think your cakes and cream will hasten the millennium. But a millennium for the unfit would be a biological hell for the fit.

There are three inherent biological difficulties with your method. First, that mental, moral and physical qualities are all strongly inherited. All through nature, like begets like. "Like father, like son" is older than Eden. Pauperism is as distinctly

inherited as the capacity to create wealth. I know one family in which in a hundred and fifty years not a single member has saved up five hundred dollars. They lived all that time among associates who created and saved thousands, even millions. The second difficulty is that such people reproduce as freely as their more highly endowed neighbors. And third, there is no correlation between fertility and intelligence or any other feature of spiritual excellence. By this I mean that stupid people beget children as freely as bright people. The latter take care of their children better and rear more to maturity. For that reason, if you let things alone, the superiors will, in the long run, outbreed the inferiors. But there is always enough of the latter left to make a serious problem. A problem which you "solve" by merely making it greater and more difficult.

It is said that Daniel Webster, when called upon to pay a bill, would give a promissory note for it with the satisfying remark, "Well, thank God! that bill's paid." You are following the same plan of circular finance. You are trying to pay your overdue bills to evolution with promissory notes. Any man who intelligently examines his tax schedule and discovers that in many states from one-fourth to one-third of it goes to take care of defectives and the socially inadequate must realize that these promissory notes are rapidly falling due. Dr. Harry H. Laughlin, of the Eugenics Record Office of the Carnegie Institution, in an admirable

memoir to Congress has shown that for a generation you have been bringing immigrants into your land "to develop its natural resources" who furnish from two to three times the quota of your old native stocks to fill your eleemosynary institutions. This takes no account of the enormous number not confined, but breeding further potential inmates with undiminished vigor. Can you develop your natural resources by polluting at its source your greatest natural resource, the blood of your people?

You think that this applies the Golden Rule. It is a flattering unction and gains you many votes. But the Golden Rule, as thus falsely conceived, will wreck the race that tries it. As I ride over the country in its marvelous trains, created not by the masses to whom you have given power, but by a few unique and wonderful minds from whom in the main you have withheld power, I see from every car window the results of your perverted version of the Golden Rule.

I see it filling jails, penitentiaries, reformatories, rescue homes, and asylums—mute monuments to your belated efforts to dam the ever-swelling tide of degeneracy which this kind of Golden Rule has largely created. They are merely catch-alls for the products of your impertinent meddling with evolution. Scarcely a dollar of this vast expenditure for cure have you spent for real prevention. You provide orphan homes for the abandoned and fatherless. This has a heart-breaking appeal and to satisfy it you can easily secure millions. But

the next election is too close for you to see what will happen to the next generation.

You have spent only a few paltry pennies, at the plea of wiser men, to find out why children are left fatherless, and why they had no uncles, aunts, cousins or relatives competent to provide them with homes. Part of the reason is plainly bad environment, bad economic conditions, bad laws, bad distribution of wealth, lack of education. Every biologist knows this without, as one of your enthusiasts writes me, "laughing and crying" through reports of rescued children who turned out well. They ought to turn out well since most of them are pretty good children and all worth saving. But their *stock* was not quite good enough to provide homes for them and consequently you have to do it at the expense of other people who have all the children of their own they can possibly properly care for.

The biologist knows without any laughing or crying that an enormous portion of bad economic conditions and lack of education are themselves due solely to bad heredity, poverty of biological endowment, feeble self-control, neurotic, ill-balanced make-up. All these render the parents either unable to make a living or unable to live together, or cause them to get drunk or run away or murder each other. High temper, uncontrollable fits of anger, feebleness of will, inability to hold a social ideal permanently in the mind, lack of ambition to provide as good homes as their neighbors, lack of mental "drive"—all of those things which often end in poverty, crime, marital desertion and social inade-

quacy—the biologist has demonstrated are strongly inherited. High temper, for instance, he believes from present evidence is a pure "dominant" inherited thing, running in families, like brown eyes or like curly hair. He can thus predict something, at least, as to the probable character of the children of such marriages. Biologists wish merely to cooperate with you in bringing about those economic conditions and social customs and ideals which will, to a large extent, make such unions of incompetency impossible, and thus this kind of children will largely disappear from the world.

In your combined goodness of heart and ignorance of biology, the thing that deceives you is the gratifying and often amazing results of education and good environment. Anybody knows that washing a hog or a human being improves the morals and manners of both. But your prime difficulty is that you stop there. You seem to believe that rescue homes and orphanages are ends in themselves. On the contrary they are merely stop gaps in the great stream of human misery. Charity will no more stop that stream than a dam half-way across will stop a river. Even if you build it clean across it only increases the river's weight and power. If you continue to think you have finished your task when you have found a home for every unfortunate child, and fed every beggar on the streets, the impulses behind your method will be nobler than those which brought the downfall of other civilizations, the result will be the same.

But you have thrown all your energy into this

program. You have gained the idea that the meek and lowly should inherit the earth, and have well-nigh completed arrangements for their doing it. They already absorb nearly one-half of the time, money and energy of civilization. Little is left for art, culture and adventure. You fail to observe that the meek and lowly you care for are mostly the grandchildren of the very same meek and lowly which your grandfather took care of, only they are far more numerous, while those who care for them are relatively less numerous. For instance, it is reported that in Indiana nearly all the crime committed by native born citizens within the past generation has been committed by about one hundred families! No doubt in every state and nation you are supporting asylums, penitentiaries and reformatories mainly to take care of a few blood lines. Why continue to breed such people on the face of the earth when entirely merciful methods are known to science by which it can be prevented?

"Unwise charity," said a very wise man, "creates half the misery of the world, and charity can never relieve one-half of the misery which it creates." Brute nature slays its thousands, but in the end your hand-to-mouth charity will slay its tens of thousands. And unless your Golden Rule is soon established upon a sound biological basis, as some of your more thoughtful social workers are becoming aware, you will reap the whirlwind of your well-intentioned but socially disastrous folly.

## THE FOURTH WARNING

### That Medicine, Hygiene and Sanitation Will Weaken the Human Race

The fourth warning of biology to statesmanship is that medicine, hygiene and sanitation, together with your frantic efforts to call mental and physical soundness out of the vacuum of nowhere are weakening and will further weaken the human breed unless at the same time we upbuild by selection the boundless health, energy and sanity that are already present in the stream of human protoplasm.

When you play with heredity and life, Your Excellency, you are precisely in the position of a man tossing lighted matches into gunpowder, trusting to heaven that it will not explode. Without realizing it, you are to-day playing with life and with heredity in this careless manner upon a perfectly stupendous scale. You appropriate vast sums of money to stamp out tuberculosis, to care for the cripple and deformed. You build great institutions to screen insanity from public view until their inmates are "cured" and returned to society—and *to reproduction.* You establish hospitals in every ward and county to prolong the life of the weak, the rheumatic, the diabetic, and those to whom nature gave a shackly constitution. You raise great milk

funds first, for feeding babies born to lives of feebleness, second, born from mothers too weak by nature to suckle their own offspring, and third, from parents one or both of whom are too feeble mentally to provide food for their children. You furnish special hospital wards for bringing charity babes into the world from parents too incompetent to earn the money to pay even for their birth, let alone their subsequent rearing. The skill of your surgeons is so great that an enormous number of babes now come into the world through extensive surgical interference, until one of your greatest authorities in this field predicts we may soon have a race of women incapable of bearing children by natural processes.

I think I can do no better than quote for your consideration from a recent Cavendish lecture to the British medical profession, by Prof. Karl Pearson, the English biological mathematician. Speaking with great earnestness, Professor Pearson said: "Gentlemen: . . . You are enabling the deformed to live, the blind to see, the weakling to survive—and it is partly due to the social provision made for these weaklings—the feeble-minded woman goes to the workhouse for her fourth or fifth illegitimate child, while the insane man, overcome by the strain of modern life, is fed up and restored for a time to his family and paternity. In our institutions we provide for the deaf-mute, the blind, the cripple, and render it relatively easy for the degenerate to mate and leave their like.

"In the old days, without these medical benefits, and without these special provisions, the hand of nature fell heavily on the unfit. Such were numbered as they are largely numbered now, among the unemployables; but there were no doctors to enable them to limp through life; no charities to take their offspring or provide for their necessities. A petty theft meant the gallows, unemployment meant starvation, feeble-mindedness meant persecution and social expulsion; insanity meant confinement with no attempt at treatment. To the honor of the medical profession, to the credit of our social instincts we have largely stopped all this, but at the same time we have to a large extent suspended the automatic action whereby a race progressed physically and mentally. . . . What will happen, if, by increased medical skill and by increased state support and private charity, we enable the weaklings to survive and propagate their kind? Why, undoubtedly, we shall have a weaker race."

It is a disconcerting reflection, yet we must face the fact, you, above all others, must face it, that the highest triumphs of science are mainly enlisted on the side of race deterioration. And the whole sentiment of the people goes with it because they can not see beyond their present sympathy or to-morrow's bread and butter. On the one hand you have used the blessings of science to create strange and monstrous engines of war which murder whole populations. And they are growing stranger and more monstrous every day. While on

the other hand, the richest genius of the race and the tenderest emotions of the heart carry the starving, the feeble and incompetent through to the hour when they can find no adventure except reproducing their kind.

You even pass great legislative decrees—not laws, for laws, as Faguet, the French philosopher, has shown, are due solely to the slow growth of human custom buttressed by the sanctions of human nature—decrees by which you do to some extent make men legally good. You think that you have thereby automatically made them morally good. You seem to imagine that a more numerous and more highly trained squad of police could guide men into the Kingdom of Heaven. Men must learn that the Kingdom of Heaven is not at the State Capital but within themselves. Everywhere we turn we see that science has created a world where wishes *are* horses and beggars *do* ride, but it tends to create a race which can only survive in a moral and physical nursery.

Dr. Raymond Pearl, Director of the Department of Vital Statistics and Biometrics of The Johns Hopkins University, and our highest American authority, has recently uttered to the public and to the medical profession warnings in full sympathy with those just quoted from Professor Pearson. We are appropriating large sums of money to reduce the infant death rate, to prolong life without reference to its natural vigor, which is the only sort of vigor that can be transmitted to the descendants;

we are enlisting money and effort on a tremendous scale under the plea that we are ridding the race of tuberculosis. But as Doctor Pearl urges, the time has come when mathematical biology must render an accounting of the real results of money and effort.

The accounting is not comforting. Professor Pearson, by the most elaborate mathematical methods, in which many of your medical profession and tuberculosis cure promoters are woefully deficient, has shown that the death rate from tuberculosis was *falling faster before you began these great campaigns than it has been since.* In 1911 he predicted that tuberculosis, in spite of all your so-called preventive measures, would very soon show a rise. By 1918 he was able to show that in England this rise had taken place. He was not able to separate the factor of the war from the result and, therefore, determine just what part it may have played in this increase. But the rise had manifested itself, and there is every reason for believing that without the war some increase would have been shown. The large scale investigations now going on by Doctor Pearl and his staff at The Johns Hopkins University upon all the factors concerned in the causation of tuberculosis, have not yet reached definite conclusions, but it seems, so far, that all Doctor Pearl's published evidence and his personal opinions based on his evidence, tend toward an agreement with the conclusions of Professor Pearson. There can be little doubt in the mind of a biologist that you are so far, by all your vast health campaigns in this

direction, merely setting the stage for a rapid increase in tuberculosis all over the world.

Fresh air, outdoor living and a climate free from the tuberculosis microbe, will not have the slightest influence in making the race immune. Indeed, these may make it more susceptible to the tubercular infection. This is abundantly proved by the fact that the American Indian had never known tuberculosis until he came into contact with the white man who carried the disease. Yet, immediately the Indians went down with tuberculosis like a squadron in the open before a machine-gun. They likewise went down in the same way with smallpox, venereal disease, measles, malaria, and all those microbic infections, which the English student, Carr-Saunders, and others have shown are largely the product of so-called civilization. The Tasmanians, one of the finest of all races physically, melted like a glacier under a tropic sun before the onslaught of measles given to them along with your Golden Rule. The last man of this noble race perished scarcely half a dozen years ago. Is it not possible that such a disgraceful denouement awaits our race if we neglect to listen to the voice of the biologist before it is too late?

The same sad and astonishing spectacle greets us with reference to your noble efforts to reduce the death rate among infants. You have done this with a result positively thrilling in its extent and grandeur. But we meet the astounding fact that by saving millions of infants who are inherently too weak to survive the further strains of life, we have

*directly increased enormously the death rate among the older children.* This has probably also contributed to the increased death rate now beginning to show up among people past fifty. Professor Ploetz has proved that every reduction in the infant death rate has caused a rise in the death rate of children from two to ten in Germany. Professor Pearson and Mr. E. C. Snow proved it for England and all evidence indicates that the same is true in the United States.

Indeed, everywhere we turn, we face the startling truth that you can not defeat nature merely by putting her again in swaddling clothes. To put it plainly, you can not tame microbes by simply putting salt on their tails. So far this is practically all you have even tried to do. May I ask who uses your hygiene? Who frequents your doctors' offices? Who fills your hospitals? Who swallows your medicines? The strong or the weak? Your wise men are searching for a cure for tuberculosis, insanity, pneumonia, flabby hearts, brittle arteries, hob-nail livers and abridged kidneys—some panacea which will conceal instead of cure the weak spot in the human armor. Heaven bless them in their efforts.

Should they find such a panacea—and they may—every biologist would apply it without a moment's hesitation. But if you apply that panacea and *do nothing else* you will again wreck the very race you have saved. A race that would save its life must lose it—must lose, I mean, its unfit, instead of coddling them as you do for reproduction. If a race

goes down-hill long enough, it will find itself at the top. That is to say, the surviving strong will be the biological "darlings of destiny."

Vice and disease purify a race. Wickedness, folly, sin are all nature's methods of racial purgation. The old Hebrew statesmen saw this principle of nature as clear as day. They constantly said in substance: "The children of the wicked are cut off," "The fool shall perish by his own folly," "The way of the transgressor is hard," "The wages of sin is death," "Every living thing shall reproduce according to its own kind—the weak shall beget the weak and the strong the strong." Said the Master, "Men do not gather grapes from thorns nor figs from thistles." You think you can. You think from the thorns of disease you can, by warm beds and soothing concoctions, wheedle nature into giving you the grapes of strength. By fertilizing your thistles you think you can coax them into bearing figs. The old Spartans threw their weaklings and feeblings over the precipice. But vice throws a man over its own precipice. Vice purifies a race, because it kills the vicious. It thus leaves the strong, the robust, and the virtuous to hand the torch of heredity on to the men unborn. And the same is true either of microbial or structural disease of man's body or mind. The old prophets saw this as clear as day, only they did not call it what we call it now, the theory of evolution. Your intentions are good, but in the end, nature, herself, will damn your judgment.

## THE FIFTH WARNING

### That Morals, Education, Art and Religion Will Not Improve the Human Race

The fifth and last of the great fundamental warnings of biology to statesmanship is that morals, education, art and religion will not directly improve the *inborn*, righteousness, educability, artistic and religious capacities or tendencies of the human breed.

This may be a dark saying to you. It is certainly one to which you are personally opposed. Man has always cherished the egotistical assumption that he was not only lord of creation but outside of it; that God or nature had bestowed upon him an eternal reprieve from the laws that govern other living things. In his egotism he has imagined that while other animals may have had to run the gauntlet of evolution, he was designed for an eternal biological joy-ride. In order to satisfy this comforting theory of his self-importance he has supposed that at some immortal moment in the past God "implanted a spirit," a special intelligence in his cranium much as a farmer implants beans in a specially prepared hill. Unluckily, this theory holds some inherent contradictions.

For, after man had had this spirit breathed into

his nostrils, we are informed that he was told with equally divine authentication that every animal, including him, would inevitably beget, each after its own kind. It seems, upon this basis, that every descendant of the original man would have had as much of this spirit as his first forebear. It is as difficult as evolution itself to explain how this original endowment got split up into such diverse proportions among the children and grandchildren of the primeval pair. Some direct descendants have received so little of this original intelligence that they can scarcely run a go-cart, while others with greater ease and less effort can run an empire. This would have been obviously impossible had man begotten exactly after his own kind. You and I would have had as much intelligence, personality and wisdom as Adam—no more and no less. Either something has gone wrong with the reproductive processes of the human race since the interesting day when Adam suddenly appeared, or else Adam did not appear quite so suddenly as is postulated, and when he did appear he was a hybrid.

By the word hybrid I mean that he had in him various sorts of qualities or characters, in varying degrees got from diverse ancestors and he has, by the simple laws of heredity now well understood, transmitted them in varying degrees to varying descendants. This is one line of evidence which leads the biologist to believe that man is a product of a world of evolution, and thus a protoplasmic brother to all living things. Variation and natural

selection are only two elements in evolution, but no biologist doubts that they have been extremely effective ones, in bringing about the infinitely diverse forms of life which fill the world with beauty and wonder.

It is this fact of the diversity among living things upon which every man who has studied evolution since Moses, has bent his mind. Moses, Your Excellency, was one of the most ardent evolutionists that ever lived. He came pretty nearly explaining it, although many of his modern votaries, versed neither in Biblical lore nor anything that has happened in science, are not aware of this. As they have not yet even caught up with Moses, it is hardly worth while to pause here to explain the numerous scientific occurrences that have taken place since the time when Moses stated positively that the living world had come about by some kind of development. For the past century, many great minds have been busily at work seeking not to disprove but to prove the developmental process of creation which Moses clearly noted. He saw as clear as any biologist to-day that the waters above and under the earth and the various sorts of plants and animals did not all happen on the same day. And the moment you have firmly grasped that conception you are an evolutionist. The balance of the mental adventure is simply to find out in more details what the processes are by which evolution has proceeded, and thus make the original grand conception which Moses gave us more fruitful, more understandable and richer in detail.

Since, then, we find ourselves in full agreement with so eminent a biologist as Moses, we can proceed to examine in more detail one phase of the great fact of evolution which he set forth. That is, how does evolution work. Until yesterday scientists believed, for instance, that the giraffe got his long neck by stretching up after leaves in the tops of the trees, and that the nightingale got her song by trying to sing. Charles Darwin, however, felt this was an inadequate explanation. He suggested that when giraffes got so numerous that all the forage on the lower branches was eaten up, those few which had fortunately been born with slightly longer necks than their fellows—that is, had *varied* in the direction of longer necks—could forage from the higher branches. He argued that these survived while their shorter necked comrades were compelled to perish. The nightingale, he believed, became a songster because some nightingales were naturally better singers than others, and that their capacity to sing either attracted better mates, or enabled them to gain more food, or in some way contributed to their success in the struggle for existence.

This suggestion appeared to be so full of common sense, so completely in accord with the experience of every farmer since Cain and Abel, that practically every scientific man has accepted it, not as a complete explanation of the infinitely complex problems of evolution but as being very helpful as a working hypothesis. It has proved ex-

traordinarily fruitful although every biologist is perfectly willing to abandon it the moment that he can find a more sensible one, or the moment any Fundamentalist disbeliever in Moses can furnish one which more readily explains the fact of evolution which Moses so clearly suggested.

Darwin, however, did not fully understand heredity. It remained for August Weismann, a great German biologist, about 1890, and Gregor Mendel, a devout Catholic monk, whose work became known about 1900, to open the way to an understanding of this mystery. Particularly Weismann discovered that when an egg is fertilized and begins to grow into a bean stalk or a genius that a wonderful and dramatic thing happens at the very beginning. That is, that, so to speak, all of the egg does not grow into the body of the new plant or animal, but at this stage nature sets aside a small portion which never grows into body cells but is reserved solely to manufacture, to use a loose word, future germ cells. Thus you will see that this "germinal material," set aside, as mother sets aside a bit of yeast for her next baking, takes no part in the life of the plant or animal, but in due time is passed on so that another animal or plant grows from it. Again some of the original material is set aside and handed on to the next generation, and so on throughout the unbroken ages.

A moment's reflection will thus enable you to see that it is literally true that "A boy is not a chip off the old block, but a boy and his father are chips

off the same block." They are both born from this stream of germ plasm which has been flowing toward us, always varying, from the beginning of life, and will flow on until it empties into the sea of eternity. As Weismann said, "The body dies but the germ cells are immortal."

This conception, so simple, so all inclusive, so easily demonstrable to any Fundamentalist who can see through a microscope, throws out of the window about three-fourths of the sociology and social theory of the past three generations. It likewise shatters the main tenets of the political philosophy of the last forty centuries. In their place it puts a much more hopeful, more beautiful, and much more manageable theory of life and progress.

When fully understood this concept means that neither animals nor men can be directly improved by better housing or food or shelter or by education. It means they can be improved only by the same method which practical men, ever since Laban and Jacob, have used to improve their flocks and corn, namely by selecting the best specimens—those which had varied in the direction of some desired excellence—for parentage.

You have spent untold millions in improving your farm plants and animals by this method, but have cherished the egotistic belief that you knew a better way to improve men. Your plan is to give them more wealth, more medicine, more art, more education, more moral suasion and more prayer. Unfortunately, these things are not transmitted, at least in any appreciable degree, to the heredity

material which is set aside for reproduction. Consequently the children never inherit to any marked extent, at least, this improvement. They can read about it in books after they are born, but they are not born with it. They are only born with about the same mental capacities and moral tendencies with which their parents were born, and not with what their parents may have acquired in school, church or college.

This brings us to the conclusion, perhaps disconcerting to you, that the more you improve plants, animals or men without this selection of the fitter for parentage, the more rapidly do they deteriorate. They do this because your easy, improved environment has enabled the weak to live and hand on their weakness and to spread it among the strong. Yet, you have risked man's earthly destiny on the fatuous notion that the "grandfather's environment is the grandchild's heredity." As a matter of fact the grandfather's environment had nothing to do with the grandchild's heredity, except as it enabled or induced the grandfather to select a wise or a foolish grandmother. You have staked everything upon the beginning by educating his grandfather. Fortunately it makes no difference whether you educate the grandfather or not so far as the genius of his grandson is concerned. You have also believed that the sins of the fathers are visited upon the children, and that if the fathers have eaten sour grapes it will set the children's teeth on edge.

Now as I have shown, in the sense in which you believe these things, they are not true. Biology has

consigned them to the realm of myth and fancy. It would only bewilder you for me to say that, under rare experimental conditions, permanent and heritable modifications of the germ cell have possibly been induced. This is open to question. But, speaking generally, the fathers can eat sour grapes for a thousand years without affecting the dental apparatus of the children. While the Hebrew prophets were not speaking of heredity but of criminal law, the sins of the fathers are not visited to any appreciable extent upon the children unless the fathers have committed the one unpardonable biological sin of marrying the sinful. But educating you or cultivating your morals will never directly cause your children to be born brighter or more virtuous. If your father went crazy from a hit on the head with a brickbat, you do not inherit his cracked brain but only his inability to dodge brickbats.

Stupidity begets stupidity, and intelligence begets brains; but a thousand years of educating or improving the parents will never improve the children. If that is all you do it is highly probable you will deteriorate the children into extinction. This is because the children are born not from the improved body cells, but from the unimproved germ cells. Children are born not from the body and brain cells which you can educate, but from the germ cells, which by any process now known, you can not educate. In short statesmanship should quickly learn the lesson of biology, as stated by Conklin, that "Wooden legs are not inherited, but wooden heads are."

# THE ETHICAL TRANSITION

## THE ETHICAL TRANSITION

### The New Mount Sinai—the Laboratory

Should Your Excellency have borne with me thus far you may have concluded that you have made a fearful mess of temporal things. This is the spiritual reaction desired. It is the beginning of wisdom. When you survey the wreckage you have made of twenty or thirty civilizations it would seem that nothing more could be said to convince you that all past methods of social organization have somehow been wrong. There must have run through them all some inherently false organizing principle—some misconception of statecraft, as well as right human conduct which in the end could not help being organically fatal.

Obviously, any standards of either individual or social conduct which bring organic disaster to the group are immoral, sinful, wicked. As Glenn Frank has pointed out, anything that hurts life is wrong. Anything which ministers to life is right. You have proceeded on the theory that a thing was right or wrong as it pleased or offended God. Even if so you have had no exact statistical or experimental methods of finding out what pleased God or offended Him. As John Tyndall long ago suggested, men have for ages been praying and sacrificing to God without making any statistical investigation

as to whether a single prayer was ever answered. Without the slightest wish to seem irreverent toward popular beliefs, until science entered the world nobody had made a comparative study of God's ways to man and the Devil's ways to man so one could tell with any certainty which was which. It is obvious to any one who will read history without the fear of falling out of the universe if he thinks freely, that men have always been sadly muddled in telling God and the Devil apart. Any one familiar with the theory of probability can readily see that they might as well in most cases have thrown dice to decide the matter. May I repeat what I said in the beginning, that men have never been really righteous because they did not know how. They could not obey God's will because they had no way of finding out what it was.

As the scientist views the world, the only possible way out of this eternal triangle of God, Man and the Devil is to discover with the instruments of science, new standards of conduct—to write a new scripture based upon the experimental and statistical use of intelligence which will enable the humblest man instantly to tell God from the Devil, and thus throw his cooperation on the side of God. For the wreckage of all past human efforts to make men good, to build a social home free from war, vice and sin, and lighted with righteousness and peace, is surely stern enough warning that revelation, prophecy, intuition, meditation, and prayer have all completely failed in themselves to guide man aright.

If there ever was a direct revelation from God to man it is surely this. If there ever was a direct command from God to man it is surely that he must add science to revelation, statistics to prophecy, analytical investigation to divine guidance, controlled experiment to prayer. We are still constantly told that all the world needs in the presence of its frightful dilemmas is "the spirit of Christ." I dissent in toto from this view. The world is filled as never before with the spirit of Christ. Men are passionately eager to be good—to attain sweetness and peace and light. But they simply do not know how. What men lack is not the spirit of Christ, but a technical method for putting it into effect.

Both Lloyd George and the Kaiser were convinced they had the spirit of Christ. They loved Him passionately. They actually thought they were imitating Him. Had He been here He might have granted that they both had something of His spirit. But He would have seen that they lacked a scientific technique for making His spirit effective. He would have seen that whereas He had Himself come to add a new dispensation to the old, that biology, psychology, chemistry and physics have come in our day to add still another dispensation to His. In short both Christ and Moses to-day would see and would thunder it with supernal power, that men need a new Decalogue, a new crystallization of all the stupendous ethical meanings of modern science. They would be the first to perceive that a new Ten Commandments must be added to those on the tables of

stone, that a new moral and spiritual dispensation must emerge from the modern Mount Sinai—the laboratory of science. In the person of some modest student of nature they would behold a new prophet of righteousness, a new minister of grace, without robe or ritual, whose mission is to teach men both what is good and how to get it, what God wants men to do and how to do it, what the spirit of Moses and Christ really was and how to make this spirit the organic principle in the earthly life of man.

Coming then to grips with the real situations of a universe of fact and not of fancy, we see that the whole ethical emphasis of modern life is rapidly shifting from the inner to the outer world, from the subjective determination of righteousness to the objective, from introspection to experiment. The effects of conduct are being referred back from the next world to this one. To the scientific student of conduct, as Huxley said of experimental science, "All the authority in the world is as nothing and the traditions of a thousand years sound like the mere hearsay of yesterday." Conscience has been taken into the laboratory. Next to authority, it has been found to be the worst guide to righteousness with which superstition on the one hand and ignorance of physiological psychology on the other, have ever burdened the soul of man. It has almost universally been assumed that if a man only acted conscientiously he must be right. If the practical consequences proved disastrous, it was not his fault. God or nature, if interceded with with sufficient

vehemence, would forgive or atone for and presumably rectify such minor details.

But the categorical imperative of the super-empirical reason which is simply metaphysical jargon for the still small voice of conscience, has all given way, in the mind of the scientist, at least, to critical analysis of practical consequences. Conscience has been found by the psychologist to be a general name for all sorts of inner struggles; mental complexes; right and wrong neuron patterns, both inherited and acquired; defense mechanisms and wish fancies, often the result of fears, superstitions and mishaps of childhood; vague memories of old wives' tales; all of which are combined with social pressure, economic fortunes or misfortunes, personal triumphs, defeats and aspirations without the slightest critical basis in the experimental intelligence.

Now if the statesman is ever to get anywhere in solving the vast ethical impasse of the modern world, or if the common man is to become a fluid moral force in the presence of his new and perplexing individual and social dilemmas, then all this metaphysico-theological junk and face-saving fustian will have to be thrown overboard. The righteous man is simply the man who acts intelligently. The best man is the man who submits his conduct to the most rigid tests of critical analysis and objective experiment. In fact, science and the philosophy built upon science have landed us not only in an open physical but also an open moral world. It is a

world of dangerous but glorious moral liberty where the sole test of righteousness is the practical results of action, and where the categorical imperative with its ready-made *a priori* moral judgments has given place to the vastly sterner but more effective requirements of inductive logic.

In this view the Puritan, at least the Puritan of popular parlance, with all his personal rectitude, is the most immoral man in modern life. It is perhaps true as Don Marquis observes that the Puritan came to America to worship God according to his own conscience and to see that nobody else did the same thing. Or as that genuine social analyst, Bill Nye said, "The Puritan's idea of religious liberty was to find some place where he could give his own intolerance a little more room." Morally he does not see beyond his nose. The conscientious objector and the professional pacifist are pleasing examples. They are thoroughly righteous if conscience be a true guide. This sort of Puritan arrives at a solution of difficult moral dilemmas by throwing himself into some sort of trance—an intellectual catalepsy—in which, in the midst of agonizing paroxysms and wrestlings with the Devil, he is supposed to be guided aright and to see his duty stretching away as a sort of fourth dimension at right angles to the length, breadth and thickness of ordinary waking life. Jacob seems to have gone through one of these moral torture chambers, through which, in the name of moral education we still conduct most of our children. Fortunately, however, Jacob fell asleep,

doubtless from sheer exhaustion. After this psychological refreshment and elimination of fatigue toxins, he was able to see his situation quite intelligently and come to a sound decision. Men who obey the stern dictates of conscience are still supposed to lead and many of them do lead just this sort of terrifying struggle with the world, the flesh and the Devil. They thus carry a body of death about with them in the happiest places to the great hurt of their nerves, livers, hearts and kidneys, and to the immense detriment of intelligent righteousness. When a man has in the spirit of science and with some of its knowledge, accepted the universe and made friends with it nearly all this neurotic fol-de-rol folds its tents and disappears. The field is thus left clear for the intelligence and emotions to work in harmony toward sound ethical adjustments of life.

If you imagine, Sir, that I am discussing metaphysical abstractions and not practical matters of hard-headed statesmanship, may I cite a simple instance out of thousands that one could easily bring to bear. A few years since the whole conscience of England was roused over the unrighteousness of employing pregnant mothers in shop and factories. The high death rate among the babes of employed mothers was truly appalling. Nobody could doubt the facts. But let us see how the good man, the conscientious man, reached a line of action. In the name of righteousness something had to be done. But what? Obviously, if conscience can be

trusted, the thing to do was forbid employers to employ expectant mothers. Straightway the government passed a bill carrying severe penalties for such "misconduct" on the part of such employers. They were compelled to give such mothers a vacation—of course without pay. It might have occurred to ordinary common sense that this was the very moment that the mother had the most need for her wages. The whole question was, however, readily solved by the conscience of the public and the legislators. Thus humanitarianism and the spirit of Christ won another step forward in the march of progress. The legislators were duly applauded and went home with their consciences at ease.

Very well for the consciences of the legislators, but how about the consequences to the mothers? This great ethical question could only be settled by the combined wisdom of three highly trained, scientific men, namely, the economist, the physiologist and the statistician. What the nation ought to do could be determined only by these three men working by the exacting methods of the analytical sciences.

Since the economist and physiologist were not even called in, Prof. Karl Pearson, the statistician of the Galton Eugenics Laboratory of London, set to work to study the mathematics of morality in this special case. Instead of the terrifying results to the life and health of the children of employed mothers which had so roused the spirit of Christ in the nation, Professor Pearson found that the em-

ployment of the mother has just about the same effect upon the health and weight of the babe at birth as if the child had had one great-grandparent with rather poor health.

Here then was a great moral movement, a case where the spirit of Christ positively possessed the nation, and where everybody wished earnestly to bring the Kingdom of Heaven to the British Isles. The agitation cost a great deal of time and money. Because it was settled, however, by the categorical imperative of the national conscience and by the spirit of Christ without the intelligence He would have used had He been there and been familiar with statistical procedure, the solution turned out upon examination by inductive logic to be worse than wrong.

But this is not the end of the matter. Let us go on with this examination of the moral ministry of statistics. Professor Pearson found that women who have to work at such times as a general rule have husbands that are either weak and puny or else shiftless and lazy. Consequently the parents should never have been allowed to get married and the children should never have been born. The children died from weak heredity.

What now becomes of the notion that the spirit of Christ is all that is needed to solve the world's abysmal moral dilemmas? The spirit of Christ is the beginning of all individual and social wisdom, but it is far, far from being its end. When a public speaker has no clear view of the solution of his own

problem he always winds up by recommending the spirit of Christ. It never fails to win salvos of applause. The people walk out in a rapture of exaltation, believing they have actually got somebody out of trouble—the Armenians, or the citizens of Fiume, or some equally unhappy persons. We went to war in the spirit of Christ. Most of us felt that He was actually patting us on the back. But when the world's premiers gathered to settle the dispute one of them innocently inquired, "Where is Montenegro?"—one of the principal bones of contention! The spirit of Christ actually hovered above the peace table, but lack of an intelligent appreciation of consequences, a true technique, a genuine science of peace, a true science of society, was the principal bar to ethical settlement. This lack of a genuine ethical technology meets us in every schoolroom, factory and home, in every relationship of labor and capital, of man to man, and of the state to the individual.

The whole upshot is that we are trying to settle the vast moral dilemmas of a new world with the incomplete or else discredited methods of the old. They are discredited in psychology, biology, philosophy and political science. Their appalling social consequences are in many instances just beginning to show up. As a literal fact men can not be righteous without statistical tables for calculating the results of conduct, or without a calculus of correlations for arriving at individual and social standards. They need all the refined instruments of the biologist,

chemist and physicist for predicting the effects of our conduct upon our fellow men. It is highly probable that the new physics of relativity and the new quantum mechanics, which, it appears, introduces us to still another new world, may furnish us profound lessons in ethical procedure.

May I for a moment set in rough perspective the genesis of the present moral situation of mankind? If we throw it upon a historical background we see that three great phases or ideas have run through all history, have in a sense made history. As a result three supreme necessities confront the modern man.

The first idea, never ending in its fruitfulness, was the idea of one God. Up to that time this was the highest poetic achievement of the human mind. It began in the twilight of the world when our ancestors began to dream the great dream of human destiny and started upon their world-girdling journey into the mysterious West. It was the struggle of the human mind to find a universe of unity without which would correspond to its own sense of unity within. Its lineal intellectual descendants in our day are the uniformity of nature, the continuity of natural forces, the reign of law, the oneness of man with that "high unknown purpose of the world which we call God." It matters little whether it came as a direct revelation or came otherwise. Its mere achievement and its social and political utilization are a superb tribute to the essential grandeur of the human spirit.

The second idea, like all ideas, was the outcome of its predecessor, the extension of this unified conception of God beyond the tribe that discovered it. It probably took its rise from the sheer necessities of human intercourse in the schools of Alexandria when she became the mistress of the world's learning, the Mecca of merchant, prophet and scholar alike. This idea received its final living and literary expression in the Golden Rule and the Sermon on the Mount. It was the first conception of human brotherhood.

Now I think it might not be a difficult thesis to maintain that up to the opening of the modern period nearly all the wars, social aspirations, political adjustments, nearly all the literature and art of the centuries of western civilizations would be found to be clustered about or related to or in a sense founded in this age-long struggle of the human spirit to realize and crystallize in life, art, society, politics, philosophy, institutions and ideals these two vast unifying conceptions of man's place in the universe, and what to do with that universe.

Each of these conceptions developed a great code of morals. Like all great mental achievements the second came not to destroy, but to develop and fulfill the old.

But life as we know it, the modern period, opened with a new revelation, equally divine, equally inspired—the revelation of natural law. And the revelation of a universe of law instead of a universe of chance, a God of order who can be trusted in-

stead of a God of caprice who can not, received its final culmination in the Darwinian generalization of organic evolution. This doctrine after a much shorter battle with entrenched opinion, authority, prejudice and vested interests has at last received the universal assent of practically all educated men. At least I am sure I shall have your complete agreement in saying that the Darwinian illumination of the hitherto dark and impenetrable mystery of living forms was by all means the most divine event since the birth of Christ in the intellectual and spiritual development of man. And unless the children of darkness overcome the children of light, unless the "monkey legislatures," such as that of Tennessee, control education, some considerable knowledge of the scope and meaning of evolution will tomorrow form the intellectual stock in trade of every educated man and woman.

Now the human mind can not go through such vast developments without enormous changes in its sense of duty, its codes of morals. No such immense additions can be made to the knowledge men have gained about the world they live in, what it is, how it operates, what reality is, what life, birth, death and God are, without this knowledge profoundly affecting their whole idea as to what righteousness is—their entire sense of the right and necessary relationships of men to each other. In other words science means a new moral code—many moral codes—superimposed upon, but not abrogating the old. No thinking man can doubt that

the working out of these moral codes, their embodiment in social life and institutions, their crystallization into laws and constitutions, their development in personal character, customs and ideals will be the great work of the present century. This task will have no end. Indeed the working out of the real conscience—the conscience of natural law—the individual, industrial, social and political decalogues of science will be the happy task of the preacher, scientist, economist, philosopher, educator and statesman in the long succeeding ages. If man fails in this he will prove that he is scarcely more intelligent than the brutes which he has for a time at least defeated. Indeed, biologists, Your Excellency, are beginning to doubt whether man can maintain his foothold upon this earth against his supremest enemy, the insects, without an application of science to life and conduct upon an unprecedented scale. The very insects may force man to an intelligent social and political ethics, or else, upon this planet at least, they may become his successors.

Now, as I have said, these three all-embracing, all fruitful ideas have in modern times brought three supreme necessities.

The first necessity is the outcome of the application of natural law to industry. This has created a mechanized civilization, which has woven a vast fabric of relationships, first, between employer and employee, and second, between producer and consumer, to which Moses and the prophets were strangers and to which their moralities furnish

neither warp nor woof. It has brought about a régime of human contacts where many of the old saints have become the new sinners and many of the old sinners, who were burned at the stake by your predecessors because of their brave thinking, have become the new saints. None of these new relationships has abrogated the old standards of personal rectitude, but they have necessitated new and far wider ones.

As a consequence we have begun the writing of a new scripture—the Decalogue of Industry. When completed it will give us an industrial order made for men, instead of using men to promote an industrial order; it will restore esthetics to industry and excitement to daily toil; it will apply science not merely to the making of goods, but so that the making of good goods will make good men; in short it will transform industry from a mere scheme of production to a scheme of life—a life of growing values, running to the brim with its satisfactions of all the old inborn instincts and inner demands of men.

The second necessity is the outcome of the aspiration for democracy—for the socialization of the entities of liberty, the distribution of the powers, authorities and adventures of government among the people. Democracy is probably as Plato said "the best form of bad government." But, until you transform it into a true aristo-republicanism it will likely be with men a reigning passion, simply because with all its ghastly costs it furnishes more adventure, more interest, more hazard, in brief more

life to more people, than did your old forms of autocracy where only a few gained the opportunity to fulfill the inner demand for personal superiority. As you and the common man view democracy it is an exalted ideal for securing better government. As the social psychologist views it, it is chiefly the expression of that inner urge, as old as life, for each individual to secure more life, more excitement, more jeopardy of his daily fortunes and more opportunity to keep himself convinced of his personal worth. Without science with its immense communications, democracy would have been impossible. Without the progressive socialization of science it will prove but a passing phase, the baseless fabric of an immense social dream. But whether your ultimate human government be mass democracy or aristo-democracy under republican representative forms, it will succeed only as it socializes and politicalizes science. But whatever form government may take this inner urge of every man for his fullest possible share in the "great treasure of the one common life" will in the end give the world a new political code—a valid, flexible, intelligent, always expanding Decalogue of Democracy.

But there is a third necessity of natural law which seems strangely to have escaped your attention—the necessity which I have already sought to make evident—the necessity for a New Decalogue of Science itself. This means the application of the scientific method and spirit, not merely to industry and politics, but to the whole individual and

social life of man, to the end that he may discover and apply those ethical principles and that moral technique which will minister to his own racial success—his own progressive evolution.

It is this latter decalogue to which the following pages are addressed. In order to make this brief summary more complete I have borrowed one or two of what I conceive are bound to be outstanding commandments in the decalogues of industry and democracy. For science must usher in a new ethics, a new way in which human beings will regard one another and their duties toward one another, a new sense of what God and life and birth and death really mean, to every man, woman and little child. Unless it does this, it is all a mere mechanical toy which a few unique minds have invented and given men to play with for a time but which, by and by, in their feeble hands will explode and bury them under the ruins of the very civilization which this mechanical toy has enabled them to build. If this does come it will be solely because men have seen science merely as a means of power, pleasure and profit, and have failed to see its incalculable possibilities of spiritual and moral liberty, its industrial, educational and political solutions, and its capacity to bring to mankind a new social salvation. For if science combined with that spirit of Christ which does run through all religions and all spiritual aspiration can not save the world nothing else can. It must go on in the same old sickening cycles of failure, the same grasping of life's prizes

by a few, while the masses of men and women must work and weep without earthly meaning and without hope that another world may right the wrongs of this, but they will fail to make this world the friendly and decent place to live in which the scientist knows it ought to be.

# THE TEN COMMANDMENTS OF SCIENCE

## THE FIRST COMMANDMENT

### The Duty of Eugenics

The first commandment of science to statesmanship is the duty of eugenics.

Three thousand years after the Hebrew statesmen incorporated eugenics into their civil and cannon law; twenty-four hundred years after Plato gave the science of eugenics its formulation in political philosophy; two thousand years after Jesus reinforced its moral and religious sanctions; sixty years after Darwin discovered its organizing principle in natural law; fifty years after Sir Francis Galton placed it clearly and finally among the analytical sciences; thirty years after Weismann proved that it was the only secure hope of human improvement; twenty years after Mendel gave it its biological mechanics and experimental method, I seem still to hear you inquiring in vague, mystified wonder, "What is eugenics?"

After all, your question is a very just one, because the eugenicists have probably been too cautious about taking you into their confidence. Perhaps I can, therefore, best answer your question by pointing out first what eugenics is not.



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Eugenics is:
Not free love.
Not sex-hygiene.
Not public health.
Not trial marriage.
Not a vice crusade.
Not prenatal culture.
Not physical culture.
Not enforced marriage.
Not killing off the weaklings.
Not a scheme for breeding super-men.
Not a plan for producing genius to order.
Not a plan for taking the romance out of love.
Not a scheme "for breeding human beings like animals."
Not a departure from the soundest ideals of sex morals, love, marriage, home and parenthood.

Eugenics is none of these things. Nearly all of these would be anti-eugenical or "dysgenic." Some of them, such as prenatal culture and physical culture, may be pleasant personal exercises, but since they have no appreciable influence in making the next generation healthier, saner or more energetic, they do not belong to eugenics. Sex-hygiene or sex-education is an excellent program for improving health and morals, but since it, too, can have no inherited influence upon the offspring it belongs strictly in the field of education.

Turning to the positive side, however, eugenics is a method ordained of God and seated in natural law for securing better parents for our children, in

order that they may be born more richly endowed, mentally, morally and physically for the human struggle. Modernizing the definition of its great founder, Sir Francis Galton, eugenics is the study and guidance of all those agencies, that are within social control which will improve or impair the inborn qualities of future generations, mentally, morally and physically. These agencies can readily be divided into three categories, all interdependent, mutually harmonious and supporting. They are:

(1) Biological, psychological, chemical and physical.

(2) Economic, social and political.

(3) Educational, moral and religious.

Through the control of all these great agencies, which if wrongly directed will impair man, and if rightly directed will automatically improve him, eugenics, in the words of the Department of Eugenics of the Carnegie Institution, is that science which "Seeks to improve the natural physical, mental and temperamental qualities of the human family."

It passes belief that you should have managed the human family for ten or twenty thousand years without having seen all this yourself. Because it was only when man left the jungle and you took charge of his affairs that he began to deteriorate, and stood in need of eugenics. Had you only learned the lesson of the jungle at the beginning, instead of having defied it as you always have done, man would have continued to progress. But, up to the time you took charge of things and instituted

"civilization" it is highly probably that no fool had ever lived to be ten years old. As F. C. S. Schiller, the British philosopher, has said, "The savage simply can not afford to be a fool or to breed fools; the fool-killing agencies in his life are much too potent." Yet up until mental measurements were recently devised, you were actually giving fools college diplomas. Animal trainers inform me that among domesticated—that is "civilized"—birds and animals they find an enormous number of idiots. No wild animal or bird society could afford idiots. As the direct result of your management of human society, man has progressed organically very little except in stupidity. The Cro-Magnon, and even the prior Mousterian man probably had as much or more brains than we have.

If you accept with me the simple, common sense explanation as to how man was first "created," namely the theory of evolution, it is perfectly evident that at one time man had scarcely more brains than his anthropoid cousins, the apes. But, by kicking, biting, fighting, outmaneuvering and outwitting his enemies and by the fact that the ones who had not sense and strength enough to do this were killed off, man's brain became enormous and he waxed both in wisdom and agility if not in size and morals. Most of our morals to-day are jungle products. It would be safer biologically if they were more so now. But civilization instituted a new ethics.

The only reason why man's deterioration has

not been more marked is because he started with such an enormous biological capital. For ten or twenty thousand years you have been drawing on that capital without the slightest effort to increase it, and have shaped practically every human institution and ideal to decrease it. You have tried to bribe evolution into giving man a biological reprieve. Your marriage customs, social taboos, family mores and institutions such as hereditary rank, wealth and democracy, which confer power upon mediocrity, also your philanthropic institutions, are all in the main devices for sheltering vast masses of inefficiency. As the philosopher, Schiller, further remarks, if man is really to progress, if these great processes of deterioration are to be stemmed and turned upward instead of being as they are now accelerated, "*every* institution and nearly every idea now current will have to be transformed and redirected."

Now just what is it that you have done and what must you do? You have substituted in the place of the jungle agencies which nature controlled, those agencies which you can control, but which so far have been managed only to your own hurt. Nature largely controlled the first four agencies which I have named, the biological, psychological, chemical and physical. Because you let her alone she lifted this tiny, thin-skinned creature from the jungle to the Kingdom of Man. You then took the other six agencies—the economic, social, political, educational, moral and religious—all largely of your own manufacture, and have reversed the whole process. By

means of the last six agencies of your making you have tried to control the first four agencies of nature's making. Under your guidance man has turned his face backward toward the jungle from which he so painfully emerged.

Now the science of eugenics means just this and nothing else—that all these agencies be turned about again and civilization be made to minister to man's organic progress—the increase of his brain power instead of its decrease, and the improvement of his body resistance instead of its deterioration. Eugenics means that nothing is true social progress that does not minister to race progress and that race progress must be seized and capitalized at every point to minister to social progress. In short, upon a grand scale eugenics is simply evolution taken out of the hands of brute nature and managed at least as well as, and if possible better than, nature managed it. If you can not do this, then permanent civilization is utterly impossible. If man can not live eugenically he can not live at all, except for brief periods, above the state of savagery.

Eugenics is thus not a scheme or a program at all. You can not enact eugenics any more than you can enact the weather. Eugenics means a new religion, new objects of religious endeavor, a new moral code, a new kind of education to our youth, a new conception of many of life's meanings, a new conception of the objectives of social and national life, a new social and political Bible, a change in the very purpose of civilization and the fundamental mores

of man. It means the improvement of man as an organic being. It means that the enhancement of man's inborn capacities for happiness, health, sanity and achievement shall become the one living purpose of the state.

Eugenics, is, I repeat, not a mere program—it is a change in the perspective of civilization, character and life. It is a new kind of humanism. While based in biology and psychology, yet its grand ideal must in time enlist our writers, poets, philosophers, artists, idealists, and every man of heart and imagination who once understands it. It seems passing strange that such men, for instance, as Mr. H. G. Wells, Mr. G. K. Chesterton, Mr. G. Bernard Shaw, and even such evangelists as Mr. Billy Sunday and Mr. William Jennings Bryan, have not lent their immense power to this last great task that lies before idealism. Mr. Wells' imagination is one of the events of this generation, Mr. Chesterton's penetration sometimes achieves the quality of prophecy, while Mr. Shaw's croaking satire and immense dramatic genius brings Aristophanes' *Frogs* down to date. Yet, with all this, Mr. Wells does not understand eugenics, Mr. Chesterton can not understand eugenics, and Mr. Shaw does not want to understand eugenics; while as for Messrs. Sunday and Bryan they have presented a scheme for saving men's souls in some other world, instead of devoting some time at least to improving their minds and bodies in this one.

In all soberness Mr. Wells ought to understand

eugenics since he was trained in biology under Huxley; but the greatest teachers fail with some of their pupils. The very romance of eugenics I should think would have intrigued Mr. Wells' powerful imagination. Mr. Chesterton, in one of the worst books I have ever read, entitled, *Eugenics and Other Evils,* goes to quite unnecessary lengths to set forth the amazing range and variety of his misinformation upon genetical and eugenical problems. As for Mr. Shaw, he thinks he has in his grand triple socio-biological combination of Socialism, Lamarckism and Creative Evolution a better scheme than eugenics. This would indeed present a formidable triple battery for human improvement were it not that the biological investigations of the past one hundred years have given little encouragement to the first two of Mr. Shaw's benignant proposals. And since the last ten thousand years have made a meager showing for his third proposal, Creative Evolution, it would seem that to reform social customs, taboos, and ideals toward better assortative mating would at least not come amiss while we are waiting for this creational process to show some results. The biologist believes such is our only practical present hope, pending the hypothetical outcome of Lamarckism and Creative Evolution, the direction of which, even if effective, no man can foresee or control. But the effects of selective mating are immediate and, when wrong, can be corrected. Consequently biologists at present have committed themselves mainly to forces they know about instead of trusting to those they know not of.

But the hope of eugenics, which is simply the hope of the race for becoming organically stronger, and more capable mentally and physically of sustaining the increasing weight of its own affairs, lies first, in the biologist increasing our knowledge, and second, in the biologist enlisting the services of our writers, artists, idealists and philosophers, in order to educate the outlook and perspective of both the statesman and the man on the street. If once they understood the biological foundation of and necessity for eugenics, and if its potent idealisms once engaged their imaginations, what power such men as Joseph Conrad, Mr. Hardy, or Knut Hamsun could wield for lifting the human race to a richer inborn endowment! Balzac could write out of it another *Comedie Humaine.*

Such men as Theodore Dreiser, Sherwood Anderson, Joseph Hergesheimer and D. H. Lawrence with their immense literary power are devoting their energies mainly to unraveling the mysteries of a sex psychology which yet awaits experimental proof of its existence. They proclaim with assurance a doubtful sex morals as the outcome of a psychology which is still a hypothesis. If they would only go to school to the new biology they would surely serve their generation more and expand their own idealisms, to take in the wider sweep of the new biological horizons. Were such a man as Mr. H. L. Mencken endowed with a sound scientific education and a great moral purpose, and the Niagara of his destructive wit and criticism turned into

channels of sound social constructivism, he would bequeath new impulses that would touch men to more intense and elevated convictions, deeper understandings of how to utilize this natural universe which science has opened to them. Our drama to-day has no moral vision and little vitality because it has no sound education in psychology or biology and no background of convictions based upon that new spirit of truth which science has given the world. Such a radiant spirit and genuine dramatic genius, for instance, as Augustus Thomas gives us a play such as *The Witching Hour,* ridiculous in its psychology, utterly untrue in its biology, false in its anthropology. And this is but one of the thousands of examples which a scientific man witnesses on both screen and stage with pain and surprise.

It is not in the least necessary that these men write about eugenics, or biology or psychology or any form of race improvement in any explanatory sense. Art is not explanation of either nature or life. It is interpretation of nature and life in terms of the idealisms of the human spirit—its longings, fears, passions and dreams. But without a sound education in nature and life—what science has discovered about them—the artists, poets, writers of our time lack the dynamics on the one hand and are missing a wealth of material on the other, for the loftiest creations of the spirit ever offered to their craft—knowledge, insights, beauties, experiences, explored mysteries which Shakespeare, Dante, Eu-

ripides, Angelo, Phidias, and Raphael never knew but longed to know. And here science has spread out for them the very things which would have made their great predecessors tingle with joy, the very things they longed to possess. Little or no use is being made of them. The prime point is that these writers and artists are responsible for giving the world and giving to you, Sir, as a statesman and controller of human destiny, a sound, new social and political philosophy, an individual and national ethics—in short, new objectives, perspectives and meanings for which individuals and nations may live. Some day they will see this opportunity and grasp it, and give the world a new wisdom, a new set of standards, a new volume of meanings to life and character and destiny. For the world-wisdom of a people comes not from its scientists who discover things but from its poets and artists, who, from these materials, create life. But art and its wisdom gain just in proportion as their idealisms are the interpretation of a real and not an imaginary universe.

These are the things that make up and give a background to eugenics—this new vision of a race of better men. This is eugenics and nothing short of it is. Eugenics is simply the projection of the Golden Rule down the stream of protoplasm. The men of the future will be born from that stream and its quality depends solely upon us. You and your fellow statesmen have discovered but half of Christianity. The biologist has discovered the oth-

er half. You have thought to apply it only to those now living. The biologist would apply it to his biological brother yet unborn.

That unborn man can build his own nurture. We only can endow him with his nature. Jesus proposed that he—the unborn—should also have life more abundantly. And the abundance or barrenness of his life, the biologist has found, is absolutely in our hands. Not environment but heredity alone will insure to him the life abundant. We can do a little, we can do a great deal for his environment, but we can absolutely determine his heredity. We can bequeath him an immense social heritage, but the biological character we bequeath him, will determine what he will do with it. And his biological character—his heredity—will determine four-fifths of his health, sanity and happiness.

Had Jesus been among us, he would have been president of the First Eugenics Congress. He would have been the first to grasp what our writers and poets and artists ought to-day to grasp, the great idealistic and spiritual significance of Darwin's generalizations, Weismann's microscope, Gregor Mendel's peas, Bateson and Castle's guinea pigs, Davenport and Laughlin's human pedigrees, Morgan's *Drosophilæ,* Galton, Pearson, Woods and Pearl's biometrical calculations. These all show us the intensity of heredity in man. With these in His hands He would have cried: "A new commandment I give unto you—the biological Golden Rule, the completed Golden Rule of science. ***Do***

*unto both the born and the unborn as you would have both the born and the unborn do unto you.*" This is the real *golden* rule. This is the biologist's conception of the brotherhood of man. This, and this only, is the final reconciliation of science and the Bible. Science came not to destroy the great ethical essence of the Bible but to fulfill it. It is the only thing that can fulfill it. And eugenics, which is simply conscious, intelligent organic evolution, furnishes the final program for the completed Christianization of mankind.

## THE SECOND COMMANDMENT

### The Duty of Scientific Research

The second commandment is the duty of scientific research.

Science alone has made true morality possible. Mastery of nature has alone made possible a large scale society. Morality began with life. It arose the moment there were two alternatives before a living organism. One alternative was "better," the other "worse." One ministered to life, the other to death. Had the first organism made the worse adjustment, life would have ended and nature would have had to try her hand again. This was individual, self-preservative morality.

But morality expanded enormously the moment there were two living creatures in the world. They had to adjust themselves not only to environment, but to each other. If one took all the food, secured the only possible coign of vantage for self-preservation, the other would perish. Life would again vanish because of its inability to make the group adjustments necessary to progress. Morality always means more life—better, higher, richer life. Thus group morality, social morality arose, always forcing life upward—upward toward more complex structure and richer experience. But for ten or

twenty thousand years you have tried to gain richer experience without improving the complexity of your structure. You have lost the cosmic push upward. You have thus lost half of the organic morality which nature taught you. You have made of yourself a "worse" being than nature made you. In the pride of your new born intellect, which is so new you have not yet learned how to use it, you have thought you could defy nature. You have done so at nearly every point. You have imagined you could conduct organic affairs better than she could. As a consequence you are probably a degenerated organism. Your intelligence probably is worse, and your morals worse. The two are well-nigh interchangeable terms, since all modern studies show that the more intelligent men are the more moral they are. They make better and more complex adjustments to environment and to each other. But you have arranged every society, including your present one, especially for this extinction of your most moral and intelligent men.

However, before it was too late and all intelligence lost by your neglect of organic morality, a wonderful thing happened. A few unique intelligences who by some good fortune, wholly unintentional on your part, escaped your destructive processes, discovered that nature, herself, could be captured, tamed and set to work in your behalf. For a million years you had been her "darling of destiny" and she willingly became your slave, a slave, however, which you "conquer only by obeying

her." In short, these unique minds discovered nature's inner secrets, how she "moves her wonders to perform." And she readily yielded to your inexperienced hands the key to her storehouse of mysteries.

But to her amazement, you at once used her "laws" to commit further and more ghastly immoralities. The first thing you did when you discovered how to harden metals was to make a sword. True, you used this weapon to kill your weaker and less intelligent fellows. Nature was delighted with this. She is careless of the individual, always careful of the race. But here an unforeseen result intervened. With this sword you gathered into larger groups for the furtherance of your progress. But the thing which alone in your selfishness you had in mind was social, economic, political and cultural progress. Had you thought as deeply and clearly upon your organic progress you would to-day be standing upon a pinnacle of unimaginable excellence, excellence of body, mind and spirit, and excellence in social heritage.

But, twenty, thirty, a hundred times you have sought to build a great social heritage at the expense of your biological heritage and every time nature has taken her toll. Every social order you have built has been organically immoral. You have purchased success for your society at the expense of capital punishment for the race. You have not only stoned your prophets but sterilized them. Your success has been merely an optical illusion. Will

your present society run the same course? Eugenics has put this same query to all civilizations, and they have answered only from their tombs.

Obviously, then, science, a knowledge of how the universe works, lies at the basis of all morals. You can not be truly righteous until you find out how. Science alone can teach you how. So far you have explored nature, first, out of sheer curiosity, and second, because it gave you money, pleasure and power. You must now explore nature because it brings you more righteousness, more capacity to make correct adjustments, first, to the universe, and second, to your fellows.

Science is the effort to find out what to do with the universe and what to do in the universe. So far you have used your science only to get rich; you must now use it to become righteous. Righteousness, correct conduct, is the true aim of evolution. The amœba that made correct adjustments, that gave it better structure, more chance of survival, more abundant life was a good amœba. The one that failed in this organic duty was a bad amœba. One developed evolutionary morals, the other evolutionary wickedness. Amœban morals and human morals are in the same cosmic category. "From the muscles of an ox to the morals of an empire" the moral problem runs the same. And from this day on when biology, psychology, chemistry and physics have all pointed out your evolutionary immorality, you must bend them to your service to develop a true evolutionary morality that will minister direct-

ly to the continued evolution of man. In short, your morals so far have stopped progressive evolution. You must now through science set evolution going forward again.

In achieving true evolutionary, biological righteousness, the search for the means and laws of nature for bringing it about has scarcely begun. Man is millions of years old, but science is but a babe in arms. We are still in dense ignorance as to the causes of evolution itself. We have, so far, only learned better how to manage it. As Charles Darwin said, "Our ignorance of the cause of variations, is profound." After sixty years of study we are compelled still to say our ignorance in this direction is profound. We know almost nothing about social psychology. The psychology of religion remains well-nigh an untouched field. Political psychology is still on the knees of the gods. Just yesterday we began to learn a little about intellectual education, but moral education is still largely in the realm of the occult. We have made immense isolated discoveries, but we do not know yet how to synthesize them into that right social conduct that will minister to organic progress and social progress at the same time. To synthesize and synchronize the "ethical process" and the evolutionary process, which so puzzled Huxley, is the next great social task of man.

But all this need not appal us, because we have learned two things, first the aim to be achieved, and second, how to study. As a friend of mine puts it

very bluntly but truthfully, "We have learned how to put salt on the tail of the occult and see what happens." We have learned to experiment. We have learned how to compare, and we have got over being afraid. We are no longer afraid of God. The scientist has accepted both Him and His universe and has quit trying, as the Fundamentalist does, to put Him outside of His universe and build one of his own. True, we make mistakes. "Science goes forward by zig zag. And we never can tell whether it is a zig or a zag." But the thing is that it always goes forward.

The significant and beautiful thing is that we *know* at last that we are working in utter harmony with "that high, unknown purpose of the world which we call God." Whatever God is, we know He is the immanent genius of things. That man is the most religious who learns the most about Him, who questions Him the most wisely and fearlessly, who experiments both with the universe and with life the most daringly. It is only in the laboratory of science that knowledge, morals, religion, and the world wisdom of the poet, preacher, sociologist, statesman and philosopher all meet. It is only here that they can all be synthesized into the final great ethic religion of man.

In this great synthesis you, the statesman who controls life more than any of us, must play an immense part. For two thousand years you have read the injunction, "Seek ye after God if haply ye might find Him." And the scientist gazing through

his microscope, his telescope, his spectroscope and into his test tube can say with a faith born of a knowledge which the old prophets did not have, "I have sought after God and I have *begun* to find Him." The man who has not seen the scientist as he calculates the speed of an electron as being as true an apostle of righteousness as was Moses, Jesus, or St. Paul, has missed the whole round expanse of the modern moral opportunity, and all the rich deep excellence of a new and untried companionship with God. Herein lies His own command to scientific research, that it is just this eternal search for fresh knowledge which always means fresh obligations and new fields of duty—the search for new means of conquest over life and circumstance and new controls over destiny—it is this that gives lasting zest to the moral effort, lifts the soul to new religious contacts, furnishes the finest adventures of the mind, and gives undying lilt and joy to the moral struggle.

For the scientist has at last taught us to experiment fearlessly, lovingly, exaltingly with life and with God. It is only thus that we can find out what life is and what God is. I have said we do not know the cause of variations, we do not know what makes a new spot on a rabbit, a new perfume in a primrose or a new trait in a genius. But the moment science began, the primrose ceased to be a mere "primrose by the river's brim," and became an object of experiment. And in that same moment God ceased to be a mere "object of worship" and became a living God worthy of study. He had urged us by every

inner call of the mind to seek after Him, if haply we might find Him. But we were afraid to experiment and merely worshiped. You burned at the stake every brave mind that sought to find Him. You have now become passive and in the main leave the free thinker alone. You must also become active and aid him. If you do, some day, it may be soon—the scientist will find out for you the cause of variations, the cause of evolution. And then we shall know how God created at least the organic world. Only then can we become His loving and obedient children and know what to do to aid Him in creating a still better world.

Science, then, I repeat, has alone made true righteousness possible. When some unknown genius of the past mixed nine parts of copper with one part of tin and made bronze, he not only lifted all mankind from the Stone to the Metal Age, but he began a new era of morals, because he began experimentally to seek after God.

And now, to-day in the electron of the atom and in the germ cell of living protoplasm, we have at last come upon God in His own workshop. The mechanist has looked about this workshop and exclaimed, "It is all machinery." The spiritualist has said, "Behind it is the breath of God." One has found a universe that works, the other a universe that is significant. One has found the tools; the other, the workman. But whether he be mechanist or vitalist, materialist or spiritualist, both are agreed that the endless discovery of natural law is the only way to

cooperate with it. And cooperation with natural law—the will of God—is the only righteousness. It is only thus that man can become a practical co-worker with God. And for all mankind to become practical co-workers with God upon an individual, national and world-wide scale—this and this alone is righteousness. This alone is organic morality. This alone is progress.

## THE THIRD COMMANDMENT

### The Duty of the Socialization of Science

The third commandment is the duty of the socialization of science.

If the scientist only can cooperate with God, *public* morality is impossible. Science, locked up in the scientist's head, or in his unknowable tongue, can no more nourish the common man and guide his conduct, than can the picture in the artist's imagination touch the soul of the common man with beauty, until the artist has transferred his picture to the canvas. The scientist advances knowledge; his interpreter advances the world.

As one writer has pointed out, the theory of social and political operation is to-day in the hands of men who have knowledge but no power; the practise of society and politics is in the hands of men who have power but no knowledge. It is for you to set up a true osmosis between knowledge and power, between social action and scientific discovery.

The question of gravest concern to mankind to-day is whether you have the intelligence and training to do this. You are the least equipped and worst trained man for your task in the whole range of life. You would not trust a plumber who was as poorly trained for his task as you are for yours. The prim-

est difficulty is that you are an average man. You can scarcely resent this, since it is your chief source of pride. The millions elect you because you are "one of 'em." Were some starry stranger to visit our planet and see its air whirling in chaos and its soil soaked with blood, in the midst of a knowledge and power over nature capable of creating a civilization of richer spiritual experience and higher human values than men have ever known, he would be, I think, most impressed with the power and importance of the average men. It is said that those who can, do and those who can not, teach. But, in this age those who can do supreme things, in the main, do something else besides politics.

As evidence of your equipment and training a recent investigation shows that fifty per cent. of those philosophers, sociologists, scientists and statesmen who make up the state legislatures of America have never been through high school, and only one out of seven has been through college! In addition the psychologists have made the disconcerting discovery that the chief reason, with numerous personal exceptions, why a man, during the past twenty-five years in America, has not gone through high school and college is because he did not have sufficient brains, energy and idealism to do so. Our national Congress is in little better state as far as concerns any special training for its vast and complex functions. Scarcely a member has ever made an original contribution to our knowledge of the perplexing science of government, and

few have shown before election any special mastery of the knowledge already gained. Sometimes, by the grace of God and political accident, we manage to secure one who learns something after election. You have elevated it into an unctuous virtue to fill your appointive offices with "lame ducks" which is merely a generous method of pensioning proved incompetency at public expense.

Sometimes in sheer desperation the people try revolution. But revolution is simply democracy turning over in bed. It accomplishes nothing. It merely runs one gang out and puts another in. It is only a change of masters and not an improvement in the master's wisdom. You gain office with the flattering slogan, "Let the people rule." But you know perfectly well that the people can not rule. The whole problem is to secure wise men to rule them. You thus pursue your profession behind a smoke screen of generalities. You have inherited from your predecessors the discovery that people in the mass are impressed with two things: first, lofty ideals, and second, things they can't see through.

You supply them with lofty ideals galore. And after any election it quickly turns out that the people have all the ideals and the politicians have all the offices. Men always do public things in the name of lofty ideals. They stone their prophets and murder their people in war in the name of justice, liberty and religion. They crush intelligence in the name of sweetness and light. Long centuries of practise in the art have, therefore, enabled you

to clothe your profession about with exalted ideals and glittering wish-fancies. Unfortunately "many a stream gets a reputation for being deep when it is only muddy." You have a wide reputation for being deep. You are likewise aware that vast numbers of people—always a majority—will believe anything so long as it is sufficiently incredible. You supply them luxuriously with incredibilities. You issue political programs and social manifestos, which set forth philosophically complete and transcendentally irrelevant solutions of our social ills, sonorous in their sound and miraculous in their illogicality.

You are not altogether to blame for all of this. Your liberal predecessors of the eighteenth and early nineteenth centuries, with a personal courage and nobility of purpose not surpassed in history, bequeathed you a political philosophy which pictured society as a vast evolving superorganism, which unless you woefully bungled the job of administering it, would enable you continually to ride into power on flowery beds of ease and carry your constituents with you. In such an "evolved social order" there would be plenty of wealth, luxury, high wages, short hours, entertainment and amusement for everybody. In sentences of unconscionable length and with a ponderous dialectic, your liberal predecessors sought to give you a fool proof chart, some transcendent "principle" of social evolution, some all-governing social entelechy, which if you once grasped it would usher the world into an abrupt millennium.

Unfortunately, if any such chart of statesmanship exists you have failed to utilize it, and science has failed to find it. The latter has searched all history and the nature of man in vain for some such all-sufficient principle of human perfectability and social progress. All the scientist has been able to find is a fact here and a fact there about nature and human nature. By comparing these facts one with another, he has erected for you a world of science, literally created for mankind a new heaven of fact and a new world of natural law. Believing, all too hopefully, that you would use the same method of thoughtful study and comparison in applying these facts by which he had discovered them, he turned this new world over to you for management. He placed in your hands untold means of human comfort and vast machines of incalculable power which he supposed you would use for expanding human experience and ushering in a new humanism. But to-day he stands aghast, lest he has placed matches and gunpowder in the hands of babes.

You never possessed greater power, Your Excellency, and you never stood in greater danger. The scientist has no fear of your good will; he fears only your lack of his own technique. All you have discovered is that science is a new means of gaining wealth and power. You have not discovered that science is a new adventure of the mind, a new way of achieving truth, a new kind of life, a new journey of the human spirit, a new method of coming to a "close-up" with the universe.

And your superlative peril lies in the fact, apparently unobserved by you, that while science has placed in your hands this cosmic engine of natural law, so filled with beauty and danger, yet not one person in a thousand, least of all yourself, has entered into that spirit, that life, that attitude toward truth and method of attaining truth, above all that sense of ethical and intellectual values by which it was all discovered and created. You seem not to have thought of standing humbly by the scientist's side and learning his intellectual and spiritual method. You have merely added unnumbered millions of voters to your suffrage. But you have failed to teach them the new spirit by which they might put truth into government. You have thus only increased the quantity of politics but added nothing to its quality. You have added no new wisdom to political life and no new adventure: you have heralded no new political achievement, stirred men to no new hopes, opened no new horizons, cured no ancient evils. You have mainly used the immense spiritual enterprise of science to secure five-cent car fares, high wages and low freight rates. You have not ushered in a new humanism.

In many ways you know how to use the scientist's inventions for human wealth and welfare better than he does, but you have not learned how to live his life. You have learned his discoveries, but not his intellectual method. This presents an ominous situation in an hour of world-wide ethical impasse when, as on Walpurgis night "anything is

more than likely to happen." Only genius can create science, but the humblest man can be taught its spirit. He can learn to face truth. In a true sense he can be educated. To reverence superiority and to accept a fact though it slay him are the final tests of an educated man. A very humble man can be taught this. It is a great adventure—this surrender of the soul to reality. From that moment a man is not afraid of the universe. He is not afraid of anything. Sometimes this miracle happens to a man at the work-bench and often it does not happen to him in the chair of the university professor. But wherever it happens, there and there only is a humanist and a liberal. There and there only is the man who will help us forward in this hour of possibility and peril.

Just so long, however, as you continue to govern men and organize their conduct toward one another, and also teach them what is socially and politically right and wrong, by the same old superstitions, faiths, wish-symbols, defense mechanisms and all the irrelevant and meaningless paraphernalia of social, economic and political mysticism which so far have been substituted for intelligence and scientific management in government and social affairs; so long as you fail to apply the scientist's freed and fearless intelligence to your own problems, just so long will you fail to make politics the finest adventure that the human mind can undertake. The noblest enterprise upon which any man ever set out was the government of himself. The next was the gov-

ernment of somebody else. And until you have put the spirit of the scientist into both you will fail to guide those you govern into a richer, freer universe of fact, and bring happier issues into the affairs of men.

Since you have failed to do this—to socialize and politicalize science, is it any wonder that we see a Tennessee legislature, with solemn social stupidity and innocent political imbecility, voting that the most brilliant intellectual generalization of the nineteenth century was wrong? And this in the name of getting back to fundamentals!

But at this point, Your Excellency, the scientist must confess himself to be more gravely at fault than you are. While the church and the politician have both fought the popularization of scientific knowledge because they feared it would weaken their control and remove their emoluments, yet the scientist himself has assumed a lofty disdain of the common man and ascribed his ignorance to the fact that he was a poor learner, when the fact is that the scientist has often been a poor teacher. Many scientists have confessed to me that they feared to write popular magazine articles or speak on public rostrums so the unlearned man could understand them "for fear it would lower their standing among their colleagues." One of the greatest of living psychologists said to me recently: "I suppose I was one of the first among my friends to come out of my shell. Now I find a delight in teaching a wider audience through the magazines

and I find the public eager for facts instead of buncombe about psychology." Many a scientist could doubtless duplicate this statement from his personal experience.

For the benefit of the scientist, the statesman and common man in this respect, I can do no better than quote a few statements by Dr. T. V. Smith, of the University of Chicago. The article is entitled "Bases of Bryanism" and is printed in *The Scientific Monthly* for May, 1923. It is the most searching study that has been made of Mr. William Jennings Bryan as a psychological phenomenon.

Doctor Smith finds that Bryanism is "the never-dying challenge to intelligence; . . . the cry from inarticulate men that they have not been let in on modern advances. . . . The average man must be increasingly let in on the processes that lead to inventions, on the theories of life and the hypotheses of progress, if the products are not to cease. . . . The average man expresses all he knows about evolution in his retort that *you* may claim the monkey for an ancestor if you wish, but as for him he prefers another line of descent. And his bigoted ignorance is due mainly to the failure of the scientist to take him in a friendly way into his secrets.

"Most professional men," Doctor Smith notes, "actually seem to prefer to confer benefits without divulging knowledge of the means by which they come. . . . Indeed, many a doctor, instead of conceiving himself as an educator, apparently regards himself as having the valuable key to a kind of eso-

teric knowledge. . . . This is more befitting the magic of the past of medicine than its high mission in a democracy. In the face of such neglected opportunities science can not reply that she is willing to give but that the common man is not ready to receive enlightenment. . . . Science must take up the double burden of intelligence, not only to sow the seed but to prepare the ground as well; not only to give, but to prepare the receiver for the gift. . . . We charge the artist with the double responsibility of creating both his art and his audience. And the scientist can expect no easier berth. Indeed, he must perhaps reconcile himself to a more difficult mission; for in his case there is perhaps a greater readiness to accept the holy fires which he steals from the altars and yet to anathematize the altars that produced them. In so far as this is true, if true, the scientist may compliment himself on having the bigger job. But there is no shirking it. The altar belongs to its fires even as the fires belong to the people. . . . Science can not reach its goal separated from the people, and yet science is separated from the people."

Here is a genuine schism in the life of humanity to-day, Doctor Smith points out, a "schism which it is the task of wise men to heal." Man is a dual nature—the heart and the head. Mr. Bryan has chosen the side of the heart "because somebody before him had chosen the head, as if the head could arrive without the heart." But science has failed primarily because it has appealed solely to

man's head and forgotten his heart. "And in so far as only one side can be right, the common man is right, because the emotional life of man is primary. But the error of the common man consists in wishing to run amuck, because he is granted the right to run freely."

Since science has furnished so many new means of satisfying the common man's emotional life, he must be prevailed upon by the scientist not to destroy the science which he so badly needs for his practical life. I might cite, as an instance, that had the recent proposed amendment to the California State constitution forbidding vivisection been carried, it would have destroyed practically every biological laboratory in the state. And California without biology would, in a decade, cease to be a fruit-growing state and become a desert. As Doctor Smith urges, science must humble itself and become the instrument of humanity's desire. He says: "Since intelligence does exist as the instrument of human need, intelligence must save itself by losing its pride." Here is a standing challenge to science itself to come to the people with its method and wisdom. For "if science can not live with the average man it can not live without him." Unless science can become socialized and politicalized it can not live at all. In teaching the people, therefore, the life of the scientist and his profession are both at stake.

But, Your Excellency, the task of carrying out this commandment is too great for you alone or for

the scientist alone. The writer, the orator, the preacher, the social student, the educator, the poet and dramatist must all alike shoulder, with both the scientist and statesman, this stupendous responsibility. We already have enough science right at hand to bring the world into an earthly paradise. It remains only for all men, through you, to apply it. I know of no man who has seen all its intellectual implications, its difficulties and possibilities so clearly as Mr. Glenn Frank, the publicist, a man who is rising among the younger men of this generation as the new type of scientific statesman, who must shortly replace the older type if the world is to reap in social organization, in industrial development and political achievement the happy possibilities for the common man which the scientist has laid at our feet. With such power over nature what could we not do for the common man if only our leadership itself could enter completely into that spiritual surrender to truth and that exacting intellectual method by which this power was by the scientist discovered. Speaking with a truly continental eloquence, Mr. Frank has called this next great intellectual step, "The Spiritual Renaissance of the Western World." If it truly lays hold of the western world, it will lay hold of all the world, for at last, through science, "East is West and West is East," in the field of political and social reconstruction.

This renaissance will be, indeed already is, a deep and rapidly awakening sense among thinking

men and women that, out of the despair and wreckage of the past decade, a new social ardor and order, new social and political objectives, in short a new humanism can be, indeed is already being, erected upon the foundations which science has placed within the grasp of man. In a book, shortly to be published, one which I call earnestly to your attention, Mr. Frank has outlined the bases, motives and objectives of this rapidly gathering movement toward a new spiritual spring-time in the hopes and hearts of men. It is already bending like a new bow of promise across the sky of human hope.

This awakening all depends for its universality, usefulness and permanence, upon the socialization of science. The writer, orator, educator and dramatist who understand the scientists' repellent language must enter the temple with the scientist, although even they may not go behind the holy veil. They must then come out upon the temple steps and in simple forms reveal these mysteries to the people. And then your immediate duty as social, business, religious, educational and political statesman is to *organize* these precepts from on high into social custom, legal statute, educational policy, religious worship and the compelling forms of art. For if the scientist gain the whole world and can not share it with all mankind, civilization will again lose its own soul. But if a true scientific and humanistic statesmanship can bring all the ministries of science to the common man, it will endow him with new and unknown powers of personal character, po-

litical efficiency and social service. For the social organization of science is simply the technical administration of the love of God.

## THE FOURTH COMMANDMENT

### The Duty of Measuring Men

The fourth commandment of science is the duty of measuring men.

Civilization has always failed, Your Excellency, because it has never succeeded in fitting each and every man to its new forms of evolution. For evolution seems to the human mind to-day to be in the main the resultant of four great forces—variation, adaptation, selection and heredity. First, each individual "varies" from its forebears. Secondly, if this variation be not "adapted" to the environment, nature kills it. Thirdly, if this variation be adapted nature "selects" this individual for survival. And, fourthly, the individual thus varied, adapted, and selected by nature, produces progeny, and by "heredity," transmits to its offspring the organic values which enabled it to survive.

This is nature's method—"natural selection." It is crude, inefficient, brutal, wasteful. Many beautiful and useful variations are lost in the vast mêlée. Man must improve upon nature's method by preserving all variations of worth and beauty. He must either remain in savagery or else institute an artificial selection as efficient as that of nature and much more intelligent. This is a task of infinite

complexity. It is, indeed, so perplexing, so filled with unbelievable hazard, it involves so many factors that its achievement will be the final test of the total genius of man. But its peril constitutes its challenge, its possibility makes it our duty, its grandeur is its appeal. To undertake it is inescapable. Once the conception of suffering has touched the imagination of any organic being it can not rest until that suffering is relieved. Once the ideal of a being healthy, sane and free has entered the mind, even as a day-dream, the spirit of man will know no ease until all men are healthy, sane and free. And now that science has shown the way, nothing but a complete control over his own evolution will ever again satisfy the better angels of man's nature that have come out of that evolution. Eugenics at last gives in one single concept both a solid reality and a quickening idealism to all those heretofore empty phrases, "social order," "social control" and "civilization."

But unless you can measure men you can not select them. If you can not tell who possesses excellence, you can not weave it into the protoplasmic fabric of the race. It is often said that eugenics is hopeless because it does not know what it wants in human nature—it has no ideal. To this Prof. Morton Pease of Harvard aptly replied: "Yes it has; it wants such men as William Graham Sumner and William James." This certainly sets a lofty ideal. We do want many, many such men and by eugenics can have them. Yet, in all soberness it is doubtful

if we want a whole race of such men. Men like these would doubtless clean our streets and remove our garbage a hundred times better than it is now done, but they could not at the same time be teachers, writers, lecturers and philosophers, unless perchance a society of such men would be so perfect that the street cleaner and philosopher would willingly interchange their tasks from hour to hour or from day to day. Pending such a possibility, however, eugenics is content with a much less but more inclusive ideal, namely, the increase of health, sanity and energy.

These three "characters" or "traits" as the biologist terms them, are so clearly matters of heredity, they are so definitely and surely passed en masse from generation to generation, there is such a wealth of them already resident in the human protoplasm that they seem to be our safest guides. If they are once concentrated in a particular family or race they are nearly indestructible. Above all, with them are knitted in the protoplasmic skein so many other of the desirable characters of physical, mental and temperamental excellence; and finally their possession in generous measure by any one individual removes at one sweep a vast coterie of human woes and insures an immense range of virtue, effectiveness and happiness.

In order to secure them not only is it not necessary to embark upon the fantastic program of the farmer breeding his animals as such critics as Mr. Wells, Mr. Chesterton and Mr. Shaw seem to as-

sume, for such a grotesque project would wreck the race that undertook it. The farmer selects only for some special excellence. He desires speed in his horse but may have to sacrifice longevity; he wishes to secure milk or beef from his cattle, but may be compelled to sacrifice hardiness. He does not want general but specific excellence. Moreover his animals are not going to build a multiform society.

But further, those shallow critics of eugenics who compare it to the barnyard methods of the breeder show a complete ignorance of both genetical procedure on the one hand and eugenical aim on the other. The breeder works boldly because he knows his own fostering intelligence will be present to provide the specialized environment for his apparently strengthened but often in reality weakened animals. But there is no such foster parent to take care of man. Once he loses his own physique or intelligence or emotional drive he is lost. This is, indeed, precisely what he does do when he leaves the jungle and embarks upon civilization. With the courage of the fool, but without the wit of the angel, he treads boldly upon evolutionary paths where the latter would tremble. It is commonly assumed that man is a domestic animal with some mystical foster parent such as social evolution or humanity or Christianity or Democracy to suckle his weakness and coddle his foolishness. But, as Prof. Edwin Grant Conklin, the wit of the biological world, has said: "Man is not a domestic animal because there is nobody to domesticate him." He

must play his own hand in the game of evolution. It is a desperate game. Nature plays fair but she permits no stacked cards and she mercilessly takes her winnings.

But, as the critics of eugenics do not see, man is already playing that game upon a stupendous scale. Twenty, thirty, a hundred times—in Babylon, Egypt, Greece, Rome and elsewhere—he has pushed out upon a bold play and staked all the winnings of his barbaric days upon one hazard, namely economic and political civilization. Every time he has lost. Critics of eugenics should see that man is already interfering with his own breeding processes almost as radically as does the animal breeder. Yet so far he has done it without even breeding for specific excellence, let alone the much more difficult task of breeding for general excellence. And now at last he has enough knowledge to make a beginning of a truly biological civilization. These undebatable facts throw man at last upon a eugenics program whether he will or no. He can not do worse than he has done. He may do vastly better.

Now the three ideals of health, sanity and energy seem not only perfectly safe objectives, but also attainable ones. True we wish much more inventiveness than we have, but in breeding for it, it might cost us courage; to breed poets is quite possible, but it might cost us the adventure and enterprise that makes a race worth writing about. But with health, sanity and energy as our racial foundation, inventors, poets and dreamers will doubtless

rise in sufficient abundance to give us both practicality and humanism. We are often warned again by our critics that some men of genius have lacked both health and sanity. This is a badly worn biological joke. Havelock Ellis finds that about five or six per cent. of men of genius have lacked sanity and a few more have lacked health. Granted it were twenty per cent., is it necessary to condemn a whole race to bodily feebleness and mental unbalance for the sake of securing one or two geniuses a century, and at the risk of losing civilization itself, when a race of healthy, sane and energetic men would probably within the same time produce a thousand geniuses? And if they did not produce a rich supply of genius they would at least be men with red blood, to whom the game of a flaming life and energetic death would be worth the candle.

For the first time in the whole history of man, health, sanity and energy are now fairly measureable human qualities. Not only can scientists tell with great fidelity which individuals possess them, but what is more significant they can tell fairly well how much of them each possesses compared with his fellows. I have already argued the question as to how accurately sanity and mental energy can be measured. The fact that it can be moderately well done, at once confronts us with two great biological as well as social necessities: first, the measurement of men for industrial and economic positions, and second, their measurement for social and political positions.

Let us turn first to vocational measurement—the humane orientation of men in a mechanized world, with an especial view to its biological consequences.

The industrial and economic machine has become so complicated that it is beyond the intelligence of any one man to fit himself happily into it. This is a tragic truth particularly to the vast mass of laborers, who must carry this cosmic machine upon their shoulders. In the old days, the most moderate intelligence could easily find its place in the industrial order. Indeed, a thing of immense biological significance which has wholly escaped statesmanship, was that a man's occupation usually descended from father to son. This in all probability resulted in building up specialized types of intelligence and temperament, peculiarly adapted to carry on efficiently and happily all the industrial interests of the community.

But the industrial revolution has abrogated nearly all of this beneficent process. It has ruthlessly torn men from their old social and biological anchorages and thrown them pell-mell into enormous aggregations where scarcely anything but chance enables a man to find his happiest or most efficient place. His true powers and capacities may remain utterly unknown, to himself, his employer, or society.

What is even more significant, he is often thrown by the same pell-mell process of chance into propinquity with some woman who in all probability has

not been bred from the same stream. Thus, not by choice but by chance, he marries and transmits not a genetical concentration, but often a complete genetical cancellation of his own temperament and abilities.

In this way it is highly probable that we have already lost, at a time when we need them most, much of the highly inbred, inborn talents which both natural and social selection had through past ages so laboriously developed.

If your present chaos in this respect continues, it can mean, as the biologist sees it, but one of two things: first, that man must go through the long, painful process of a new evolution until proper talents and temperaments have survived and been distributed among the industrial population; or, second, before such a brutal process can make this genetical achievement, your immense industrial civilization will disintegrate from lack of the special abilities and traits of character needed at every point to man it. It may be of course that there is sufficient general intelligence and good will biologically resident in mankind to survive this foolish process. As your machine grows more and more complex, however, calling upon more men of special talents to man it, it is highly doubtful if the sheer natural "general intelligence" and abilities exist in the human race to pull you through. Even if there is, such a process is as crude, unintelligent and wasteful as the grim method of natural selection itself.

It is, therefore, for you to make a choice between two alternatives: first, setting an enormous number of your trained scientists at work discovering, educating and allocating the varied mechanical, industrial, abstract and social talents now in the race; second, throwing mankind into the hopper of a new evolution, with all these unpredictable, artificial factors added to natural selection, with the possibility, indeed high probability, of wrecking the whole industrial machine.

Perhaps a homely illustration spoken in the vernacular by the "employment foreman" in a large industrial establishment may throw some light on what is happening now in man's biological selection. It was related by a noted vocational psychologist before a recent national meeting of experts, seeking to aid you in this new form of human evolution.

"On Monday," said this foreman who had been given his position of immense significance in man's biological evolution, not because of his especial fitness and training, but because he had lost a leg in this company's employ and this was their cheapest (?) method of remunerating him for his dismembered part, "On Monday I turns down all men with white collars, on Tuesday all with blue eyes, Wednesday all with black eyes. Red-headed men I never hires, and there do be days when I have a grouch and hires every tenth man."

Now, there is no evidence that red-headed men or men with black or blue eyes, or who have enough ambition and sense of propriety to wear white col-

lars are deficient in either industrial efficiency or biological quality; nor that every tenth man possesses greater talents than every ninth or twelfth man. Yet this industrial selection, and the assortative mating which results from it, takes an enormous proportion of the place formerly occupied by nature in deciding who should survive and who perish in the struggle for existence. And whether this selection, this vast experimental breeding, which is going on, in spite of Mr. Shaw and Mr. Chesterton, be wise or idiotic, incalculably affects not only your output of wealth but also the whole trend of human evolution. Nobody knows precisely where it is going, but may the defender of eugenics say to its critics that it is going somewhere and going with enormous tide, volume and rapidity?

Taking up the second phase, that is, the social and political measurement of men, Thorndike, as I have elsewhere noted, ascribes three intelligences to man: first, mechanical; second, social, and third, abstract. Our present instruments probably succeed in measuring the mechanical and abstract better than the social intelligence. But since they are all rather highly correlated—probably about forty to fifty per cent., to use a somewhat loose statement of correlation—if we can well measure one we have a good line on the other two. And since we can pretty well measure two—the abstract and mechanical—and in no small degree evaluate phases of the third, the result is that the social traits and capacities of man are not altogether beyond a moderately accurate estimation even to-day.

Vocational selection alone, which is rapidly proceeding among all far-seeing, humane employers, will be a long step toward securing the three basic eugenical qualities, namely, health, sanity and energy. It is being powerfully and ably promoted by the Psychology Corporation of New York, under the leadership of Dr. J. McKeen Cattell. I look for these undertakings to attain a very high eugenical, racial significance. They will fit the man to his job and the job to the man. They will tend strongly to throw men and women of similar mental and physical traits together, with the result that they will naturally and happily tend to marry each other. This will encourage the preservation by intermarriage of these excellent, even if mediocre, qualities, to the immense benefit not only of your industrial society but to the soundness and safety of the race.

But when, in addition to measuring men industrially, we can with considerable success measure them socially and politically, the world will be fairly well started upon a true evolutionary civilization. If all men were thus measured by every device of science, and their mental and physical profiles not only charted but made matters of public record, we would know each man's real contribution, both to the social and political order and to the racial make-up. In this human chart, owing to the fact that a man is a network of many ancestors, and since every man carries within himself a host of family skeletons and a host of family virtues, none of which he may exhibit in his own body or char-

acter, it would be necessary to include three or four generations of his ancestors in estimating his racial value. By appropriate calculations, this can with encouraging success be done—more encouraging every day. Indeed, as asserted by Col. Robert M. Yerkes, it will doubtless be possible in no great time to measure a man mentally, physically and temperamentally as accurately as a bar of steel. J. B. S. Haldane, the British biologist, has recently asserted upon sound biological data, that nothing but refinement of present technique and knowledge stands in the way of our producing human beings largely by artificial means. There can be little question that in time this will be done. Every step we take fills man's pathway with greater possibilities and perils. It shows the danger to the whole social organism if you do not enter with the scientist into both the spirit and intellectual method of his tremendous discoveries.

For a generation or two, any such social and political, or racial weighing and measurement of men would have to proceed with extreme moderation and latitude. Men and women are already being radically and boldly rated as to their physical, mental and temperamental values, both in industry and in our schools and colleges. Their destinies are thus profoundly influenced. No serious doubt has arisen as to the immense advantage both to industry and education of this process. There seems, therefore, no reason why, even in our generation, they might not be moderately and cautiously rated

as to their social and political value in the state and their biological weight in the racial stream. You must first of all cease treating men in the mass and recognize that men are ineradicably unequal. You must measure these inequalities as rapidly as science can do it, even approximately, and build your government upon them. Nothing brings men greater misery than the sentimentalism which fails to recognize their inequalities and fit society itself to this most outstanding fact of human nature. You must measure human differences and give each man social, political and industrial responsibility according to his several abilities and character. You must also give him his racial chance—the privilege of parenthood in the same degree. This latter, however, will result naturally through social ideals, taboos and customs, when men and women are taught to recognize and evaluate a man's real biological worth.

However, the following important considerations emerge here. In fitting a man successfully and happily in industry the psychologist does two things. He first measures the man and then measures the job. He then fits the two together. He finds how much intelligence and what type of temperament a job requires, and then finds a man who fulfills these requirements. Thus the job and the man fit each other to the immense benefit of both. But another step will be necessary in order to bring about a true aristo-democracy. Men must be measured much more completely. For you need not only industrial,

mechanical and economic efficiency, but you need social and political efficiency. *You must next measure how much intelligence, and what type of temperament and what qualities of character are required to make a good citizen.*

Nobody now knows this important thing. You have assumed that everybody could vote except obvious imbeciles. Yet we find in industry that a man may be a genius as a teamster and an idiot as a watchmaker, and vice versa. Also, many a good watchmaker or teamster or college professor may be a poor citizen. Such a man may lack general intelligence, or emotional interest or character. A teamster may possess great emotional interest and sound character, and thus, with but moderate intelligence of the abstract type, may make a splendid voting citizen. The college professor or doctor may have great intelligence, but lack sadly those temperamental elements of character required for sound citizenship. Obviously, the first need is for you to endow research upon a large scale to measure the social and political intelligences of men and correlate these findings with all other available data. At present, beyond question, you are voting an enormous amount of social and political imbecility.

Two things must next be ascertained: *first, how intelligent a man should be to vote at all, and second, how much intelligence the job of voting requires.* It may be found that some men can vote intelligently upon some problems—such as fundamental human

rights—and can vote only idiotically on others. To-day you permit a man to vote on all questions, although it may be he can vote with splendid intelligence upon the right of search and seizure, habeas corpus or the wages in his craft, but could not vote any better than an imbecile upon debt-refunding, national defense or international policy. In short, no society can be efficient where every sort of duty is assigned to every sort of man.

But, if, with all these difficulties, men could even in moderate and cautious degree be measured it would have two great politico-biological consequences. First, it would enormously improve social and political efficiency, and second, it would set up true values and sound norms of assortative mating. This latter is the final aim of eugenics. By assortative mating, which is one of the great forces in evolution, is meant the tendency of like to mate with like.

This is a tremendous force all through nature and probably reaches its climax in man. Contrary to popular opinion—which is always wrong upon questions of natural law unless it has been tested and corrected by science—opposites do not often marry each other. People as a rule marry those who strongly resemble themselves. Good people, if thrown into contact, tend strongly to assort with and marry good people. Tall people generally marry tall people, and the shorts marry the shorts. The fats marry the fats and the slims marry the slims. Intelligence, wherever given an opportunity, mates

with intelligence and stupidity with stupidity. This is a thing of great importance to statesmanship. The enormous consequences of assortative mating are just beginning to be appreciated even by scientific men. It determines largely the trend of evolution. It is the chief point of eugenical attack. If evolution should build up at great expense a character, such as musical ability, beauty or mechanical intelligence, and then make it repulsive to the opposite sex she would wreck all her work. But since like selects like and if possible mates with it, it tends powerfully to preserve in the offspring the virtues which enabled the parents, themselves, to survive. Where the parents are defective, it tends also through like finding its like to intensify their mutual defects, until they prove fatal to the offspring, and this strain is thus happily eliminated.

But, in the indiscriminate vortex of society, these great tendencies of untold value to man's organic destiny are not given proper scope. It is true that the industrial revolution and mechanization of man's whole environment, have brought in a few new and healthful tendencies in mate selection. The automobile and wide communication are probably among them. Industrial civilization is not all bad. But it is extremely doubtful if the good selective effects of industrialism make up for its undoubted destructive tendencies. But were all men measured and rated even with the greatest moderation and latitude, each man would be much better known than he is now for just what he is worth. Wealth could

not so easily cloak stupidity, nor rags conceal genius. Men would drift much more easily and happily toward their natural levels. I regret that I can not extend my arguments to show how I think this program would result in a great spread of social, industrial and political tolerance. But much more than now the truly good man, good biologically and psychologically, would rise, and in his new station marry his like and perpetuate the combined virtues of himself and his wife in the breed. The man less endowed would fall more surely than he does now into his proper and withal happier niche, and there perpetuate his sound and healthy mediocrity. The bad man would be soon discovered and eliminated from reproduction.

I regret, also, Your Excellency, that space does not permit me to detail many other excellent social, political and biological results which I think are bound to flow from such a program. Nor have I the space to answer your quite reasonable objections. You will have a number, I am sure, since I think this is the first time these considerations have been presented to the public. But obviously all previous societies have failed because they did not know how to measure human nature and provide for it. We now know human nature vastly better than ever before. The scientist stands ready to lend you his discoveries about it. I am convinced that by mutual tolerance and compromise of his views with your expert knowledge of political mechanics that society and the racial constitution would gain incalculably.

For, when all is said, nothing else can be true civilization, true humanistic society except, first, the selection by intelligence, second, the education by social environment, and third, the preservation and transmission by heredity of everything beautiful and ennobling in human nature and physique that rises above the protoplasmic stream. It must fit those possessing any true excellence to the environment, and shape the environment so as to preserve and constantly intensify this excellence. For this reason vocational education and adjustment, social and political measurement and education, and humanistic culture, must all combine to discover each human worth and fit the individual possessing it to an ever-widening environment which the descendants of such a scientific and humanistic social order are bound from their inborn excellence to build.

## THE FIFTH COMMANDMENT

### The Duty of Humanizing Industry

In approaching the problems of business and industry, both of us are doubtless agreed, Your Excellency, that what we need is plain, hard-headed horse sense, and not vague, impractical theories. It is your especial claim, however, that this is the kind of sense you have used and the spirit in which you have, for the past century and a half, approached the situation. But, since both industry and business are still not far removed from chaos, and scarcely anybody is satisfied with the result, least of all yourself, it raises the query as to whether your idea as to what constitutes horse sense has been entirely correct. The outcome has not been millennial.

In addition, during all this period many earnest scholars, calling themselves political economists and political scientists, have given you much high-sounding advice which you have in the main treated with scorn. Your scorn now turns out to have been in the main justified. Their deductive, *a priori* political economy served well as drill material to discipline the minds of college students. When these same students, however, later became industrial managers, they seemed to find as little use for their hard learned theories about the "economic

man'' and the profit and pleasure economy of hypothetical human nature, as they did for their Latin and Greek in settling strikes, or determining wages.

It seems clear now, after a generation of experiments upon the human mind and body, experiments upon mental operations, emotional reactions, the physiological bases of behavior, fatigue, energy, glandular dynamics and the like—a generation of experimenting instead of arm-chair theorizing—that both you and the academicians were in pretty dense ignorance of the very thing you were dealing with, namely human nature. What makes this seem still more evident is that, during the past decade or more, an increasing number of far-sighted business men have cautiously applied many of the results obtained by these experiments with very gratifying results both to the capitalist and laborer. The outcome has been at least encouraging enough so that forward-looking industrial statesmen, as well as the new type of biological, psychological and economic scholars, feel that if social reconstruction can not proceed hopefully along these lines, then we know of nothing else to try. Nothing seems left but the chaotic muddling which has justly given the name of The Industrial Revolution instead of The Industrial Evolution to the past century and a half. But, with the new spirit and new knowledge of human beings regnant, it is hoped that the latter will be the name of the era that lies just ahead.

Two great questions thus arise before Industrial statesmanship. The first was suggested by reading

Prof. G. T. W. Patrick's little book, *The Psychology of Social Reconstruction,* one of the best books about life that I have ever read. I can not but think that Your Excellency would find it extremely suggestive of many helpful reforms as well as new mental attitudes in statecraft. The second question comes, I think, naturally to the mind of any one who has made the immense body of current psycho-biological literature an occasion for his own thinking.

The first question is: What would happen to a society whose troubles were all over? If all the Utopias from Plato's Ideal Republic and St. Augustine's City of God down to Karl Marx's Manifesto and Mr. Wells' futurist speculations, should all descend upon mankind at once, would the human beings which modern psycho-biology and physiology have revealed be happy? Would we not within a week have on our hands a revolt which, as the late Carleton H. Parker wrote to a friend "would make Bolshivik Russia seem like a dilapidated Christian Endeavor Convention"? I am inclined to think we would. I think that the new sort of creature which psychology has revealed this Homo Sapiens to be, is a complete and final answer to at least three-fourths of all the ready-made plans for making men happy by reconstructing our social *machinery.* The kind of being that they would fit does not exist. At least the most exhaustive search, with the most refined instruments of science, has failed to find him.

The second question is: What would happen if our labor leaders, capitalists and politicians should

suddenly adjourn their numerous conferences for settling strikes, working hours and conditions, wages, division of profits and the like, and all go to school *together* to our psychologists, physiologists and biologists? What would happen if they should go down into the laboratories and absorb not only the spirit and method by which these men approach their problems, but also become possessed of their new knowledge of human nature and draw upon it for the working theories of industry?

These scientific students have been forced by their investigations to make radical alterations in their own views as to what makes social institutions and what really guides human society. They find that men are moved by different currents from the ones that have seemed heretofore so obvious to labor leaders, capitalists and economists. These currents are deep, obscure but powerful. They range all the way from personal vanity to religious reliance upon God. The Freudians maintain that some of them are revealed only in the world of dreams.

Suppose, now, that those responsible for modern industry should go to school for a long time with such men as Thorndike, Colvin, Terman, Pinter, Yerkes, Watson, MacDougall, Stanley Hall, Graham Wallas, Walter Lippmann, Walter Weyl, Bertrand Russell, George P. Adams, James Jackson Putnam, Ordway Tead, Thorstein Veblen, Franklin H. Giddings, Everett Dean Martin, James Harvey Robinson, Whiting Williams, John Dewey, Trotter,

LeBon, Ross, Hollingsworth, Cattell, Mitchell, Patrick, Seashore, Davenport, Bateson, Castle, Thomas Hunt Morgan, Pearson, Pearl, Woods, Cannon, Lee, Crile, and the disciples of Freud! These men have given us as different an idea as to what man is, as Gallileo gave us as to what the world is.

I do not know, Sir, any better than you do what would happen. But I know it would be something very important. It might indeed be something truly imposing in its significance for the future of mankind.

I imagine you were taught in your college days, as I was, that man is a docile, peace-loving, money-loving, working animal, whose motives are high wages, short hours, leisure, food, sleep, peace and pleasure. We were also assured that a society that had no war, alcohol, inequality, autocracy, poverty, or special privilege, and which did have democracy, universal education, women's suffrage, the rights of man, equality of opportunity, peace, a full dinner pail, and leisure for self-improvement was the true goal of the world's desire. This is almost precisely the kind of things we hear our labor leaders, politicians and capitalists at their round-tables still talking about. Both sides seem to believe, as we all did a generation ago, that if the men—they still talk of men in the mass instead of men as unique and remarkable persons—if the men could only secure these things, especially more wealth, all would be well. A generation ago, for instance, we were assured that when laborers got an eight-hour

day they would spend the balance of their time in self-improvement, the latter being rather vaguely envisaged as reading good books, enjoying good pictures, or good music or good something; or else they would take up some healthful avocation such as wood carving, interior decoration and even writing poetry. It did not occur to us that they might really *enjoy* good prize fights or good deviltry of some sort—even a good war. In fact millions of men and women have now achieved an eight-hour day, and yet the visible output of peace or poetry has not sensibly increased.

It has led our experimenters to feel that nearly all of us have been working upon wrong theories of human nature. These probing students now believe that man is an adventurous, dynamic, fight-loving animal, motivated by age-old instincts and broad organic trends, many of them unconscious, and that what man really wants is not wealth or pleasure, as such, but *opportunity for rich activity*—activity which will in itself be the fulfillment of normal function. Man wants chiefly, they believe, the satisfaction of his organic impulses, those patterns in his very nervous system which are either inborn or else extremely easily acquired.

"Nothing is more foolish," says Prof. E. A. Ross in his *Principles of Sociology*, "than to imagine that all the defects in people flow from defects in society, and will vanish if only we organize society on right lines. Some of the traits developed in man a hundred centuries ago make trouble now and will have to be allowed for aeons hence."

The new psychology finds that man instead of being a creature easily satisfied with high wages is a restless being who naturally loves to hunt, wander, brawl, intrigue, drink, play, dance and sing, take risks, and at the same time seek safety under a leader or symbol of security, and above all preserve the sense of his own importance. As Professor Patrick says: "The twelve labors of Hercules turn out upon examination to be for the most part exciting adventures. The gods of all nations, who supposedly typify the happy ideal life are seldom represented as working. The Greek gods did not work; they banqueted, intrigued, fought and loved women. Only Hepheastus worked and he was the joke of the Greek Pantheon. Our own God is not pictured as working, at least only six days. He is a king, warrior, legislator, judge, and enjoys praise and song."

It is not the purpose of this brief chapter to evaluate all this new biological psychology, nor to outline to statesmanship some program of procedure guaranteed to bring satisfaction to the industrial world. But, it is hoped that the attention of statesmanship may be directed toward this vast body of new wisdom which must be taken into account if irrational men are ever to be brought under rational control. It has practically exploded the happiness and pleasure, political economy and psychology of two centuries. In its place we have set forth for consideration a being motivated very little by logic, but mainly by emotions, wills to power,

"drives," strange likes and dislikes—one who spends most of his life in trying to convince both himself and others that all his acts are wise, just and reasonable, whereas most of them are unreasonable and occur merely because he is built that way. For instance you have thought to bring industrial peace by various manipulations of the pay envelope. But when we find a strike caused by the fact that certain types of machinery, without safety devices, compelled woman workers to arrange their hair in a manner unbecoming to feminine beauty, and reflect how deeply this is connected with profound sex-impulses that were gray with age long before organized industry was dreamed of, it is bound to give us new conceptions of the difficulty of social reconstruction.

Upon this point Professor Patrick quotes the economist, Wesley C. Mitchell, as follows: In embracing the new psychology, "Political economy will asume a new character. It will cease to be a system of pecuniary logic, a mechanical study of static equilibria under non-existent conditions and become a science of human behavior."

It is, indeed, only when both political and industrial statesmanship see themselves as merely organic extensions and intelligent administration of the *science of human behavior* that they will serve their true functions in man's social development. The new psychology shows us that if our troubles were all over, in the sense in which social and political troubles are usually conceived and stated, if the

world were made over into a sort of super-Chautauqua of culture, good clothes, plenty to eat and brotherly love, yet, the sort of beings that psychologists have found men to be, could exist but could not *live* in such a standardized, sterilized world. Yet, nearly all our modern social regeneration movements are merely sloganized epitomes of just such a Chautauquatized world. They are devoted to developing the necessary *machinery* for bringing men to just such a parlous state of social and political stagnation. As Professor James said in his famous Chautauqua lectures, in all such schemes, "the precipitous element is left out."

Perhaps we see this as clearly defined as anywhere in the tendency of men, since religion has lost much of its hold, and the state has become too huge and far away to furnish a substitute sufficiently sizable for men's imaginations to grasp—the tendency to organize into lodges, unions, societies for abolishing this or that evil—as though hiding an evil from sight abolished men's inborn impulses. We see this particularly in certain societies which are supposed even by their members to possess some of the esoteric secrets of life. Everett Dean Martin and Professor Patrick have outlined better than any one else the psychology of such phenomena.

"Movements such as Socialism, Bolshevism, and the I. W. W.," says Profesor Patrick, "become cults to which their followers offer a loyalty and devotion that is symbolic of the whole life of man in history. If these cults meet with opposition, if

there is a little mystery about them, if they inspire a little fear, if there is a kind of underground communication among the members, if there are certain secret symbols, if there is a chance for something like martyrdom, if there exists a strong feeling of brotherhood within the organization, the spirit of loyalty and devotion burns brightly. But the peculiar fact here is that we, who are adherents of any of these movements, never suspect that in our devotion, our enthusiasm, our loyalty, our sacrifice, even our fanaticism, we are simply *living;* that we are experiencing life's great realities themselves, that we have here the fulfillment of function. We do not understand that this expression of our instinctive life is life itself. We think we are engaged in a movement that will *prepare* men for life. We think that when the particular kind of social order which we are striving for is realized, then we shall live."

As a matter of fact, in these mimic and mostly useless activities, we are *living* now. When the precipitous element, the adventure, hazard, jeopardy and sense of importance of ourselves are absent we seek to put them there by artificial means. Man possesses reason, but this is no proof that he lives by it or enjoys using it. He thinks only when he has to. The rest of his life is simply irrational fulfillment of *his* organic make-up. True, he thinks it is rational. He thinks he is thinking. Indeed he spends most of his life giving rational excuses for his irrational acts. But men are not much removed from boys who play that they are savage chieftains out

upon some warlike enterprise. Men seem to put away childish things, but, as a matter of fact, in the main, they merely hide them behind some ponderous solemnity—some rational looking camouflage.

Obviously, then, no mere pay-envelope, pecuniary, self-interest, wage philosophy will ever humanize industry for a being so complex as this, one so full of contradictions. Men must have wages but they must have much more. The mere fact that when war was declared in 1918, the hospitals for the insane were nearly one-fourth emptied of their inmates, and that unnumbered chronic melancholics and hypochondriacs took on new life as though there had been a Second Coming of the Lord, and thousands of neighborhood quarrels and family differences disappeared like magic, is ample evidence that the genus homo is a strange creature and one hard to manage. He certainly can not be managed by any simple, self-interest, happiness formula. War is irrational but it is not abnormal. It is a perfectly normal fulfillment of function—a mere continuation of man's whole evolutionary history. And industrial strife is probably a more normal thing than industrial peace.

Man has never known peace and safety in his whole existence. He can not get used to them all at once. Peace will come only as the long result of education, and then it must be not a Utopianized Chautauqua but a peace full of virile and adventurous satisfactions. When we see timid and apparently peaceful bank clerks and department store

girls, as well as cloistered philosophers and laboratory students, on Sunday riding Ferris-wheels, shooting the shoots, making high dives and taking tail spins in airplanes, we see plainly that man was not naturally born to attend Sunday-school. He will do so only under compulsion, or superstition, or else an education that leads him to see in it some richer experience and value to the mind than running down some steep place into the sea, which he often does merely to give the devil in him a chance for exercise. True, man loves his home, his pipe and his fireside, but he enjoys them only after a day of satisfying activity. He enjoys them then mainly that he may recount to an admiring wife or family circle his remarkable achievements during the day—how he talked up to the boss, or told the superintendent what was what, or slew a lion in his pathway with his bare hands, or, in some way, outdid his fellows in personal prowess. Saving our faces is our chiefest earthly occupation. We rail at snobbishness, yet it is as natural as digestion. A whole volume could be written on the evolutionary survival value of snobbishness. It has had untold evolutionary significance and has been an important factor in making classes and races what they are.

The notion, then, that some revolution that merely overthrows the political government or crushes the system, will automatically establish a society where such a creature will be happy and satisfied is as fatuous as the remark of a feeble-minded citizen, when a fight was on in an Indiana

town as to moving the county court-house to some other city: "You can move the court-house," he said, "but you can't move the cellar." A revolution might move men into a cooperative commonwealth of peace, plenty and brotherly love, but the old cellar of his evolutionary trends, passions and irrationalities would remain. These can only be redirected or sublimated by the slow processes of an education, that will fill life with new values, philosophies and objectives.

As I have previously argued, when men are measured and their emotions and intellectual powers fairly well distinguished, it will go a long way toward fitting each man into that position in industry and society where his instinctive trends, likes and dislikes will be satisfied, at least to a much higher degree than is true to-day. But even with this accomplished, no theory of industrial statesmanship can longer leave out of account, as its basic working hypotheses, the revolutionary discoveries as to the nature of the human units which it assumes to manage. As an instance, we think we have discerned the "cause" of some great strike when we see the newspaper head-line—"Men demand more wages!" But when we find, as Carleton H. Parker pointed out, that in 1910 nearly three and a half million migratory laborers in America were without any family, or normal relationships to women or children or home, any normal satisfaction of instincts a thousand times older than industry, and that more than ten millions of unskilled labor-

ers were in little better plight, it is evident that the real cause was not set forth in the newspaper head-line nor in the report of some solemn commission, but was back in the jungle. Indeed, many times, probably most of the time, neither capitalists nor laborers know why they oppress on the one side or rebel on the other.

Psychologists are not agreed either on the names or precise nature of these inner demands and drives that motivate men. Ordway Tead lists sixteen. Veblen, MacDougall and others find varying numbers and descriptions. Thorndike thinks at least five deserve special consideration, which he describes as follows in *Harper's Magazine:*

"First the satisfyingness of activity, mental or physical, at which one can succeed.

"Second, the satisfyingness of mastery.

"Third, the satisfyingness of submission *to the right kind of man.*

"Fourth, the satisfyingness of company and cheerfulness.

"Fifth, and most important of all, the satisfyingness of that feeling that one is somebody of consequence . . . . which we may call the sense of approval."

Under present American conditions Thorndike believes that the last deserves to be ranked next to hunger, sex, physical safety, and intolerance of bodily pain as a motive of conduct.

Certainly all this presents a different picture of man from that of classic political economy. How-

ever, the application of man's inborn trends is even more difficult than their discovery and proper christening. Mr. Whiting Williams, in an able series of papers in *Scribner's Magazine,* criticizes the idea that instinct psychology has yet furnished us with sufficiently succinct rules for daily guidance in a factory. When it comes to getting people to *do the right thing at the right time* it may be a great addition to have a list of man's primal instincts, but as one workman said to Mr. Williams in his own vernacular:

"Why, man alive! how're you goin' to know? You can't put no guage on 'em, can you? And there's no signals to give you a 'Fair Block!' or a 'Slow with caution!' nor nothin'. It's all just guess work—it's gotta be—with people so fickle and fancy-free like 'n' everything. Nothin' o' that in mine, thank you!"

What we lack, thinks Mr. Williams, is a *common denominator* for the big motive in each case. Suppose, he suggests, that a foreman hears of trouble and rushes over with his list of trends and instincts in hand such as gregariousness, parental bent, workmanship, curiosity, acquisition, fear and flight, anger, hunger, self-approval, or sex, with all its Freudian frills, his difficulty is to decide upon which one to apply and how much of each. Does he need a bit more of instinct No. 5 or a bit less of No. 12?

The prime difficulty is that man evolved under conditions that required the use of man's passions and instincts in wholly *different proportions* than

is demanded in modern situations. *"These high-speed multiplex days,"* continues Mr. Williams in italics, *"have so decreased the proportion of the requirements of our physical preservation and so increased the proportion of the demands for our social well-being as to require some less primitive statement of the source of our modern activities.*

"In these days of the labor union, the Thirteenth Street gang, the federation of women's clubs or the League of Nations, the *saving of our physiological skins has given way as the chief of human motives to the saving of our social faces.* . . . It is the change in the *proportion* of these two compulsions —this I submit, is the real change in the setting of the modern stage."

However, I may say that this change seems to me to be recognized by such men as Tead, Thorndike, Taussig, Martin, MacDougall, Veblen, Robinson and others among our social philosophers even if not in the precise form in which Mr. Williams states the problem. They seem to me, mostly to rank the saving of our social faces, the passion for self-esteem and social esteem next to sex, hunger and bodily pain as moving forces in modern society. And in these respects, as I see it, Your Excellency, there is no one labor problem, but each laborer is himself a labor problem, a problem in psychology, physiology and biology. Men are not masses of undifferentiated material but the human units of which they are made must be isolated and their spiritual values recognized and provided for.

This brief sketch is, therefore, frankly, a mere restatement of the new views of human nature which I think have emerged from modern scholarship. But I trust it will indicate to Your Excellency that a new type of political economy and industrial statesmanship is already upon the world's intellectual stage. It remains for you to apply it. The men upon this stage are studying in detail the thing which you have to manage in the mass, namely, human nature. We have just begun to discover what it is. I hope this sketch of it may indicate the immense advantage it would be if you and your colleagues should go to school, not to or under these men, but should enter *with them* into the laboratory of men's souls and work patiently by their sides.

The psychologists and biologists can contribute much to you, but you can also contribute much to them. And out of this *entente cordiale* between theory and practise, between experiment and management, I am sure there would emerge a new and sound philosophy not doctrinaire but dynamic, not about hypothetical men, but an actual man. And upon the basis of this actual man you would, I think, conceive it to be the duty and privilege of political and social statesmanship, to erect a social order that would fulfill the normal functions of his nature, instead of, as heretofore, treating him by turns as an object of sentimental adoration, mystical illusion, altruistic pity or brutal exploitation.

Society will never be perfect because man him-

self is not perfect. But it will improve because, by the inner drive of his own structure, man is always striving for something better. And, unknown to himself, this free and open striving for something better is the very perfection which he seeks. Without his realizing it, this is, in itself, his social ideal. Industrial and social machinery can never succeed so long as its objective is merely to produce wealth, unless wealth itself be conceived as the freeing of men to that adventurous strife which fulfills the dynamics of their own biology. But, we shall never even begin our journey toward the Delectable Mountains of the Perfect Society, or the Ideal Republic, until man is regarded honestly, straightforwardly and, upon the basis of experimental knowledge, as the strange, interesting, contradictory, childish and noble, but ultimately measureable, weighable and predictable being that he is, instead of the simple, but mystical and unpredictable creature which philanthropic sentimentalism, deductive metaphysics and brutalizing tyranny, each for its own purposes, have thought that he ought to be.

## THE SIXTH COMMANDMENT

### The Duty of Preferential Reproduction

The sixth commandment is the duty of *preferential reproduction of the human herd.*

Our Puritan forefathers lived on parched corn but they talked about God. They shot Indians through the port-hole with one eye and taught the Bible to their children with the other. And the thing which has transformed America from a wilderness to a world power is that the children per family numbered from five to fifteen.

Will these men and women of prayer and iron and children be America's continuing breed? Or will the children disappear and the prayer and iron vanish with them? Nothing is more certain in science than that godly parents beget godly children and an ungodly stock spawns a godless brood. In the building of nations, schools, churches, industry, law and order, a high-born godly race is everything, absolutely everything.

Let us then turn the searchlight of science upon America's family prospect; for the prospect of the family is the destiny of any nation. And remember it is always *"the man who is left"* whose children, whether good or bad, replenish the earth in the days to come.

In 1920 the school-teachers of America who had had any children had given birth to 2.2 children per family; the bootblacks had come within one-tenth of giving birth to four!

Now bootblacks may be as worthy in the sight of God as school-teachers, but it is not their wont to lift nations to new levels of thought and culture, or open new horizons to the ken of men. School-teachers, on the other hand, are among those national saviors who teach us new criticisms of self and destiny and touch the mind to new adventure. Moreover they aid immensely in building civilizations where bootblacks may have boots to shine.

This crude birth rate, however, does not measure to the full the relative contributions of bootblacks and school-teachers to the citizenship of to-morrow. Nearly all bootblacks marry and have children, while scarcely half our school-teachers ever marry at all. We have fully carried out the racially destructive portion of Saint Paul's injunction and forbidden a *married* woman to teach. As if some of the richest strains of the national blood were not committing suicide fast enough you have by law, precedent, economic penalties and social pressure compelled them to do so!

If we look further into one of the most thrilling volumes of recent years, one which ought to have been among the "best sellers," but of which I imagine the government had difficulty in giving away a thousand copies, entitled "The *Sixth Annual Report of the Birth Statistics of the United States,*" we find

that in this same year, 1920, the lawyers and judges of America who had families had 2.2 living children, while janitors and sextons had 3.4; authors, editors and reporters had 2.1, workers in stone quarries and gravel pits 3.6; skilled workmen had 2.6, boiler washers and engine hostlers, 3.1; doctors had 2.1, skating-rink and dance-hall keepers had 2.6; mine officials had 2.9, mine laborers 3.6; while stenographers and chemists made the poorest showing of all with but 1.8, and the garbage men and scavengers one of the best—at least one of the highest—with practically three living children.

It seems, to put it none too strongly, that America is simply "hell bent" on taking a brief biological joy-ride, with the definite policy of later turning over its vast intellectual conquests to the morons.

Now it requires neither Elijah's mantle nor Sam Weller's "million magnifyin' glass that could see through a double deal door" to read the meaning of such pathetic and portentous figures. Every school child knows that Burbank, Schull, Hanson, Davenport and others achieve their triumphs solely by selecting the best specimens as parents. There is no mystery about it. Farmers ever since Eden have done the same thing, only they lacked these men's wizard eyes and technical methods to detect the best.

But, suppose they bred chiefly from their worst! Well, that is precisely what America, under your management, is doing, and what every civilization

has done from the human dawn. For that reason we read their history only in their ruins.

Everywhere we turn in civilized lands we see this anti-Burbanking process in full tide. Every nation on earth is rushing recklessly upon its biological breakers. With all available facts as his sounding board, in a singularly and cautious analysis entitled *Is America Safe for Democracy,* Prof. William MacDougall, psychologist of Harvard, sends out this solemn warning: "When I see America dancing gaily with invincible optimism down the road to destruction, I seem to be contemplating the greatest tragedy in the history of mankind."

A man, Your Excellency, is neither a pessimist nor an alarmist merely because he tries correctly to read the Census Report. But, if he does read it correctly it is difficult to keep him from becoming both. Unfortunately in order to impress us, statistics have to be written in blood. When we see all "the pooled intelligence of the planet" rushing to its death on the battle-field we are bowed down with the sheer awe and terror of the spectacle. But when we find our intelligence vanishing, from the fact that ten or twenty million babies from our better stocks failed to get born within the past generation, largely from economic, educational and political conditions, it merely causes a shrug of the national shoulders.

We lack imagination. We fail to see the depleted ranks of our leaders that stretch away to guide the coming generations—that "thin red line"

tipped with genius which is ever growing thinner, and which is all that ever stands between any nation and its doom. We fail to picture our republic's future without its Adamses, Edwardses, Lees, Lowells, Randolphs, Perrys and the few thousands, *not millions* of truly *First* Families whose souls gleam with genius and glory from every page of our national history. They are a dying race. And neither biologist nor statistician can easily discover their like among the inferior hordes that are bound to be left by such tragic birth rates as these.

True, the average man laughs at statistics even when they tell the truth. But all nations have gone laughing to their doom. True, also, there may be counter-tendencies and biological hopes. I think there are. But they have to be sought for with prayer and statistics. A generation ago they were the outstanding biological features of our national life.

May I, with a view of enlightening us both, ask Your Excellency a few possibly embarrassing questions?

Do you know that there will never be more than just about one hundred ninety-seven million people in the United States? The credit for this brilliant demonstration belongs to Dr. Raymond Pearl of The Johns Hopkins University. This number will be reached by the year 2100—a short one hundred eighty years from *now*. Persons already born will have grandchildren who will see that day arrive.

Do you know that *the* American problem, to-day,

*now,* is what sort of people will that race of one hundred ninety-seven million be?

Do you know that your policies begun *now* will largely determine whether they will be a *healthy* race, rich in mental and intellectual vigor, or a squirming, spawning mass of incompetents, without culture or leadership?

Do you know that practically four babies must be born to every married couple who have any children at all in order to keep the race from going backward?

Do you know that one-fourth of each generation (which is about one-eighth of all people born) produces one-half of the next. In the next generation this half produces approximately three-fourths and the next generation nearly ninety-eight per cent. so that the quality of your original one-fourth, whether high or low very soon determines absolutely the quality of the whole?

Do you know that the basic problem of all politics is, *where is that one-fourth to-day?* Are they the teachers, lawyers, doctors, merchants, scientists, statesmen and skilled workmen, or are they the thoughtless and uncreative without skill in their hands or imagination in their brains?

Do you know that birth control is the most momentous fact in the history of mankind; that if wisely used to increase the birth rate of the superiors it is the most effective instrument for race improvement within the power of man, but if wrongly used to decrease the superiors, while the inferiors

continue to breed with undiminished vigor, it will wreck the race that tries it?

Do you know that if your political, educational and economic conditions permit it, birth control will cause the patriotic, the prudent, the fatherly and motherly, those endowed by nature with rich, unselfish instincts, to beget the majority of the nation's children, causing an increase of morals, intelligence, beauty, unselfishness and all that make a sound foundation for a great human breed; but that so far your social and economic forces have pushed these most precious of all racial strains to the biological wall?

Do you know that nothing can possibly improve the condition of the poor like decreasing their numbers through an extension among them of birth-limitation?

Do you know that while one million country-born people produce one hundred leaders, one million city-born people will produce nearly two hundred fifty leaders; that all studies indicate that cities suck up the richest blood of the country and sterilize it in the fires of city ambition, until in time the blood of leadership is left in neither city nor country and, when leadership vanishes, civilization goes with it?

Do you know that democracy is at the cross-roads and must cease to be regarded as a revealed religion and become an object of critical study; that its final test will be its capacity to breed an *increasing supply of leaders;* that if it fails in this, both democracy and civilization will soon become what

Earl Balfour said of the human race, "a brief and transitory episode in the life of one of the meanest planets?"

Here then, at last, biology has furnished statesmanship with a fool-proof chart of many of the innermost processes of national life. To put it plainly we "can see our finish." For the first time in history a statesman knows the following facts:

First, he knows how many people there are going to be.

Second, he knows how they reproduce.

Third, he knows that physical, mental and moral qualities are all inherited with equal intensity.

Fourth, he knows that the section which produces the most children will in an incredibly short time absolutely determine the physical, mental and moral quality of the whole.

Fifth, he knows that the results of education are not to any appreciable degree transmitted from one generation to the next in the blood, and that therefore nothing can improve the race except selection of the fitter for parentage.

Sixth, he knows that the man who is left, by this new instrument, birth control, and other selective factors, will be the only man whose physical, mental and moral character will be passed to the citizens of to-morrow.

Let us for a moment once more turn our eyes upon this all-important individual—the man who is left, to hand the torch of heredity to the children yet to be, and see who he is likely to be in America if things go on without a change.

There were one hundred two Pilgrims who came over in the *Mayflower* and landed on that first Thanksgiving Day at Plymouth Rock. No finer stock to found a great national breed of men and women ever set out to sea. I have the names of all of them lying here on my desk as I write. More than half of them died within the next few months, Only twenty-three are known, according to this statement, to have left descendants. But what descendants! Let us read off just a few at random. John Adams, John Quincy Adams, Charles Francis Adams, James A. Garfield, Ulysses S. Grant, Levi P. Morton, Elihu Root, Chief Justice Taft, President Zachary Taylor, Daniel Webster, General Leonard Wood, Ralph Waldo Emerson, Henry Wadsworth Longfellow, William Cullen Bryant, Frank Munsey, Percy MacKaye, Winston Churchill. It was eight generations ago that they landed. They later expanded to many thousands. But civilization is conquering its creators. Competent students have shown that, at their present birth rate, within another eight generations all their living descendants could be put into another vessel the size of the *Mayflower* and sent back home!

It would probably require the entire American and British merchant marine to transport the furniture that "came over" in that remarkable vessel, yet a tiny boat of the same size would carry all its living descendants. Pity indeed that such paltry things as chests and sideboards would last longer than the priceless blood of the people.

If we turn to a study of any section of the descendants of the old foundation stocks such as the Daughters of the Revolution, the Colonial Dames and the like, we find the same tendencies laying upon them the hand of racial death.

Mr. Frederick S. Crum, as quoted in Popenoe and Johnson's *Applied Eugenics* studied the genealogy of 12,722 New England wives of the old Colonial stocks. In one hundred twenty years their blood has been vanishing from the racial stream as follows:

| | | | | |
|---|---|---|---|---|
| 1750-1799 | children | per | family | .....6.43 |
| 1800-1849 | " | " | " | .....4.94 |
| 1850-1869 | " | " | " | .....3.47 |
| 1870-1879 | " | " | " | .....2.77 |

"There," as these authors remark, "in four lines is the story of the decline of the old American stock." The Census Report adds its impressive testimony. In 1800, for every one thousand women, there were 976 children under five years of age. These were all of the old strains. In 1920, for all stocks, old and new combined, the number of children had dropped to 476, a decline of 500 children per 1000 women in 120 years! This would be no racial disaster were it not that the decline has nearly all taken place in the better endowed sections of the community.

Faced with this array of staggering circumstances, and they could be multiplied a hundredfold, you may ask anxiously, "Watchman, what of the

night? Is there no happier dawn ahead?" I think there is. There is no biological cloud without its silver lining. Above all, the hope of the scientists is that, as never before, science has placed man's destiny in his own hands. I can not in a paragraph outline a new social psychology nor a new biological basis of politics. But the encouraging thing is that these new bases, these new norms of social action, these new ways and means of social control *are here.* In the very method of its discovery of our staggering dangers science has given man the means and method by which those dangers may be escaped, aye indeed turned into channels of progress. And, even at the worst, to men and women of courage, no goal is ever open except the highest.

First, the highest message of biology—the science of life—is that notwithstanding their terrifying dangers, human sympathy, social tenderness, protection of the weak and meek and lowly, special education for the feeble-minded and uncontrolled, medicine, hygiene and social uplift must not only go on *but be multiplied many fold.* They are the very evidences of civilization. Man's heart and not his head is the finest product of evolution. But impulsive sympathy must be linked with the higher, deeper, wider, indeed, protoplasmic sympathy of science. Instinct must be subjected to reason or man's heart will burst his head. Social betterment must work with race betterment or both will fall into the ditch. A race that will not respond to hygienics will never respond to eugenics. A race that

will not care for the cripple before its eyes will care nothing for the cripple in the unseen future. The inferiors must be saved for everything *but reproduction;* the superiors must save themselves basically and biologically with this end in view.

Second, science must go on until, through cheaper transportation, cheaper food and goods, humanized industry, saner social and political ideals have restored the old family homestead, the family loyalty and solidarity, which have been the biological and psychological sources of every great national advance. The break-up of the old American homestead—and the same is true in other lands—combined with the rush to the cities and mad scramble for the lavish prizes of science; the building of a vast industrial civilization in which the individual is lost and which thwarts many of man's oldest and deepest instincts are at the bottom of nearly all the trouble. They have bred a sterilizing national psychology. We have become a nation of city-dwellers and gold-diggers. The "flapper" has replaced the mother as the national idol. The wedding ring has become a mere temporary ornament. My wife just hands me the following from the morning paper:

"A former Follies beauty, widow of a wealthy publisher, married again to a picture star, being sued by the wife of a business man on the charge of alienating his affections, is engaged to marry an actor as soon as the courts call off her second marriage, and the actor's second wife divorces him,

while her husband, a picture star, who married her after his divorce from a famous model, is reported engaged to a vaudeville headliner, whom he will marry as soon as she divorces her husband, a broker who divorced a society girl to elope with her."

It would certainly be a wise child—should there be one—who could identify his own father or mother out of such a mess of bio-sociological pottage.

However, with all that, people are not worse than they were. I think they are better. But when man moves from his old home on the land into city apartments, flats and boarding-houses, and his farm or little shop is transformed into vast factories and department stores, he moves into a new psychology. His most imperious instincts are denied. Old loyalties are lost. Civic virtues die in apartment-houses. True patriotism decays. Men can't be loyal to a smokestack. They will not go out and shed their blood on the battle-field in defense of a boarding-house. It takes room to raise either morals or children. A genius has been described as a man who could devise some way to raise chickens in a flat. A still greater genius would be the man who could raise character or children in one.

Third, in spite of all this, I am convinced that a change is coming in our national psychology. *Industry is tending toward humanization, and not away from it.* Cheaper transportation and more dependable if not cheaper food supply are rapidly building up suburbs about all our cities, where the patriotic, home-loving, child-loving, unselfish types

of people are once more founding homesteads, where all the glorious clan and family loyalties are rapidly blooming again. I have found from extended observation that in these suburban towns, motherhood is distinctly coming into fashion. Woman's freedom is not destroying but fostering it. And best of all, it is setting up a new selection since parenthood is voluntary for the first time in evolutionary history. The Bohemian, the self-seeking, the merely intellectual, can well hang themselves in the cities by their own ropes. Many fine stocks are unfortunately still perishing. But the movement, I think, is *already up, and not down.* And since parenthood is voluntary, if you create economic conditions that make parenthood possible to our best working people and sounder middle classes, and when motherhood becomes the national fashion, the style, the mode, and is not penalized and discredited, the racial destiny is safe—the problem of eugenics is largely solved.

Lastly, the world is bleeding but undaunted, and there are still millions of good people. Just before his death the late John Fiske gave us, I think, the most eloquent sentence in the literature of science. "The consummate product," said he, "of a world of evolution is a character which creates happiness, replete within itself with divine possibilities of ever fresh life and ever larger joy, fulfilling truth and beauty in directions forever new."

To the youth of this land, Your Excellency, is thus given an immortal privilege—the privilege to toil

together in the lofty partnership of man and woman toward a race whose character *will* create happiness, a new well-born, inborn happiness of health, energy and sanity, for every man, woman and little child; a character teeming with luxurious potencies of ever-fresh life and larger joy; a character which will fulfill truth and beauty in divine directions and to god-like purposes forever new.

Whether they will do this or can do it I do not know. Whether men and women have the social coherence, the economic motivation, the educational ardor and the political capacity to do it I do not know. I believe they have. But I do know that beyond the horizon lie just two things. America must choose between them and choose while it is yet called to-day.

One is slow race-improvement through the decrease of the badly-born and the increase of the well-born; the other is Armageddon.

## THE SEVENTH COMMANDMENT

### The Duty of Trusting Intelligence

The seventh commandment of science is *the duty of trusting intelligence.*

In one of the many thousands of volumes about life which statesmanship has neglected or rejected, there is preserved the remark of an ancient Hebrew statesman, who, it seems to me, stood closer to the Lord than have many of his successors. His name was David, the greatest of Jewish kings. "I have been young," said this thoughtful man, "and now am old; and yet have I not seen the righteous forsaken, nor his seed begging bread."

If this be a true picture of the social, economic and political situation of men in King David's country, it should become the model for every state. The Great Society will find here its true biological as well as political ideal. The good man survived and the bad man perished. This is the only sound bio-social osmosis. The right man in such a country is exalted and the wrong man is not puffed up. A man's income, either in money or social and political rewards, is apportioned to his social worth. His social and biological worth at least keep sight of each other. They are both reckoned in the same coin.

After radicalism, socialism, bolshevism, democracy, autocracy, anarchy and every other nostrum, each shall have contributed its share to the group life of man, this pronouncement of David will remain as the basis of all sound bio-political philosophy.

Upon this basic rubric, scientist, educator and statesman can all unite to rear a state where it pays to be good, and there is money in righteousness; where brains are worth having and intelligence is more effective than stupidity; where sweetness does not starve and light pays its own way; where superiority is discerned and gentility of soul rewarded; where the prize fighter is not kept in such luxury that genius can not even afford to see him fight; where the dreamer is understood and the prophet not stoned; where the children of light can earn more money than the children of darkness; where wisdom is actually more precious on the exchange than rubies, and fineness of nature, than much fine gold.

In brief, no state can remain permanently upon the world stage where virtue is not given *survival value* and intelligence not accorded the same honor that it had in the jungle. Not mere physical strength, nor loudness of voice, nor fierceness of mien, but "the better angels of our nature" is the finest thing evolution has drawn from its sea of blood. But you actually teach men to fear and despise intelligence and nobility, and let their children at least rustle for themselves.

When you conferred political power upon

masses of men scarcely two hundred years out of serfdom and barbarism, you failed to teach them to reverence greatness of intellect and richness of spirit. They are actually afraid of such things. For nearly a generation it has been little short of a national joke in America that one of its United States senators was a "scholar in politics." As though education actually injured a man for the profession of statecraft! It may have injured this particular individual through the fact that it was largely the scholarship of a bygone age, but education usually results in improvement even in statesmanship. This may not have been true when club and spear and personal craftiness were not only the sole weapons, but the sole needs of effective government. But in a scientific age, when government is not merely the problem of the location of power, but of the administration of human service, politics should become the most technical of all the arts and professions.

It has hardly, however, become so. The state of Minnesota recently elected a United States senator, presumably its ablest political genius, highly trained in all the intricate machinery of national and international administration, deeply versed in social and political theory and history, skilled in all the latest methods of psychological, biological and statistical approach to social problems. It is somewhat disconcerting to learn that this amiable gentleman has received his training for this highly perplexing situation by managing a small farm, and

that he can scarcely speak the English language. This, however, seems to be amply compensated for by the fact that he speaks it in "an extraordinarily loud voice that will shake the dome of the capitol." However, he is said to "believe in the plain pepul," higher prices for farm products, and hates Wall Street. What more could be asked? How to *secure* high prices for the plain people has for generations taxed all the genius of economists. Since intelligent study has not altogether solved the problem perhaps it is best to try just plain ignorance. If Minnesota admires and trusts that type of political intelligence, it is highly probable that that is about the size and type of political intelligence that Minnesota would admire and trust. By a vote of four to one New York City recently re-elected a mayor to conduct affairs almost as vast as those of the Roman Empire, but enormously more technical, who had amply demonstrated his right to the title "Honest John," even though the title was not accompanied by the words "Intelligent" or "Wise." If intelligent government can be got from such "democracy" then miracles are a common occurrence; by using the right conjuring word, such as "brotherhood" or "hundred per cent. Americanism" men *can* gather grapes from thorns and figs from thistles.

When a scientist attacks a problem, he first devises appropriate means for calculating his own "probable error." To calculate the probable error of this kind of statesmanship would require omniscience.

Even if our scientists create for you, as they have, a great civilization, and then succeed in measuring the intelligence and good will which men possess for conducting it, it is all futile if you do not trust this intelligence and good will with power and influence. But instead of teaching men to look up to intelligence you teach them belief in magic on the one hand, and that slogans and words are social solutions on the other. This is a sloganized age, an age of searching—by statesmen at least—not for solutions of social problems but for what Professor James called "solving words." Democracy, Progress, Brotherhood, Communism, Uplift, Humanity, are not solutions for anything, but mere solving words. James says, they act in politics, as the word "God" acts in religion. Just so a man believes in God, he is on the road to salvation without reference to his achieved spiritual values or inner experience. And just so a thing is democratic or progressive without any reference to where it may progress toward it must be right. It has exactly the right NAME. As James points out, Solomon could control the evil spirits because he knew the right names of all of them. Address an evil spirit by the right name and you've got him. And this age is obsessed with the idea that social evils will yield to the same treatment.

If a "democratic" remedy fails to cure anything it is proof, not that it is the wrong remedy, but that it is not democratic enough. Pour in a little "more democracy!" To calculate, to measure, to analyze

the psychology of human motives, to add up columns of figures, to calculate standard deviations and coefficients of correlation,—this requires hard work and intelligence. It requires intellectual men. It requires men who want to solve things instead of finding solving words for them. The masses have no use for such methods or such men. "Give us the plain FACTS," they exclaim, meaning that this is the last thing on earth they do want.

Just at this moment the latest number of *The Journal of Applied Psychology* reaches my desk. I note that Prof. Donald G. Patterson, of the University of Minnesota, has examined a group of students who had got far enough to take up the technical study of applied psychology. It is somewhat appalling to learn that a significant percentage of these cultivated youths believed in the following: astrology, chiropractic, fortune-telling, graphology, hypnotism, memory systems, mental telepathy, spiritualism, phrenology, physiognomy and absent treatment. This may throw a light on the election of the aforesaid senator from Minnesota. If college students believe thus in a magical world, it is a matter of wonder what the masses believe. Professor Thorndike found that among the upper one or two per cent. of the American population about one in four does not know "whether the Ten Commandments are called the decagon, or the Decalogue, or the decament or the decemvirate." It would be interesting to find how many know whether or not Moses wrote the *Decameron*.

But the faith in solving words in the place of hard-won solutions reigns supreme over this age. There never were so many problems, so many solving words, nor so many people who believed in them. Yet they never have solved anything. Nothing but intelligence and good will, usually extended over long periods of time, ever solved any social problem. The notion that the "cure for the ills of democracy is more democracy" is on a par with the popular belief that aspirin or calomel or some pharmaceutical whatnot is "good for whatever is the matter with you." Graveyards are filled with prematurely deliquesced citizens who held these pious beliefs.

Everywhere we turn, we find that both you and the masses to whom you have given power, distrust intelligence. The famous or infamous Lusk Committee of New York, in the name of sound statesmanship, solemnly announced that one of the chief duties of the state is "to protect its citizens from dangerous political doctrines." The state thus constitutes itself the chief bulwark against its own progress. Who is to be the judge of "dangerous political doctrines"? What are "dangerous political doctrines"? Anything that threatens the status quo. Anything that threatens to improve things. Anything that threatens to put the ins out and get the outs in. Anything that means a free open discussion of economic, social and political problems.

In this line nothing is more refreshing than the recent motion in the British House of Commons

that Great Britain should resolve itself into a socialistic commonwealth. This is getting somewhere in genuine statesmanship. I should instantly take the opposing side; but let us talk the matter over. Let us find, first, what *is*; second, if we ought to go somewhere, third, where we ought to go, and, fourth, whether we have the means to go even if we ought to go. Something will turn up out of the talk. We may find the status quo is the best quo possible. Very well, it is worth while to be reassured. Nothing, Your Excellency, except free intelligence, will ever set society free.

But you do not even trust the intelligence of your youth. Freeing the minds of youth to all the inrush of the new age is our only hope of a new age of the spirit. James Harvey Robinson, one of the wisest men aboard with us to-day, has recently made an extended examination of our under-graduate schools. He returns to say that "our schools teach everything except something new." Nicholas Murray Butler, president of the largest college in the world, assures us we "must get back to Greek ideals." Why not get forward to some new and refreshing ideals of our own? The Greeks did, why can not we? They did it by teaching their youth to think without the fetters of the past, facing with courage and gaiety the things that are. Are our youth less to be trusted?

It seems so. Take up any school text-book. Everything has to be taken out of it that might offend the Catholics, or Jews, or Presbyterians, the North-

erners or Southerners, or Democrats or Republicans or the Irish. After this purgation there isn't much left worth teaching. Votes must be had at all cost for another election is coming soon. As that astute citizen, Edwin E. Slosson, Editor of *Science Service,* observes, you are already demanding that we teach our young people a Baptist zoology, a Presbyterian chemistry and a Methodist astronomy. One young man studying for the Catholic priesthood told me he was "studying biology" and "had got as far as St. Thomas Aquinas!" Perhaps in a century or two he will get to Thomas Hunt Morgan. Why not use the present as a free spring-board into the future, instead of a diving point into the past?

"Education," according to Everett Dean Martin, "is the formation of those mental habits which enable an individual *to react adequately to real situations.*" Such an education as this, he says, "gives a man a control of facts." It teaches him to meet the universe—to take it into friendly partnership. If men ever faced real situations it is the men here with us now. A return to the Greeks, rich as was their humanism, will not meet the real situations of a civilization they never dreamed of. As John Dewey shows, the very content of men's life-experience, the sort of a universe they live in has changed. We no longer live in a Greek world but an American, English, French, German, Irish, Russian world. And as Martin again observes: "Too much of our education is still moulding men to type for the State's sake instead of for the child's sake."

We merely make them high-class trained animals and not free-thinking men. You are afraid to trust children with the real secrets of life. They ought to grow up thinking freely without the slightest concern as to whether it preserves the status quo or whether it might upset your seat and spill you out. We even hear that laboring men are clamoring for "labor education"—some type of education no doubt that cuts out anything that might indicate that capitalists are not as Balzac said "all viscera." As though there could be more than ONE education, the kind that teaches men to meet *adequately* real situations.

No, you do not follow King David's excellent statesmanship in honoring righteousness and intelligence. The other day I saw twenty thousand "fans" frantically applauding a "home run," and near by was a biological laboratory with two half starved students and a discouraged professor in it. The professor told me he had labored for ten years to raise fifty thousand dollars to promote biological research in America and had been able to secure only seventeen hundred dollars. The fans yelling outside, so that I could scarcely hear the professor talk, had probably contributed half the desired endowment that afternoon to find out whether the Giants or White Sox were the more expert in hitting a zigzagging ball with a stick. Life is made for baseball as well as biology, but the money and honor should hardly be proportioned between the two in the ratio of five or ten thousand to one.

Professor James thought that the final aim of

education was to teach us to know a good man when we saw one. Your average "fan"—movie, baseball or political—neither knows a good man nor a bad man when he sees him. He knows a good movie actor or baseball player or politician. He does know a good trained animal when he sees it. But I am speaking of good men. He appreciates only one kind of good men—the ones with money in their pockets. A hundred years of popular education has taught all the fans to read, write and count money. But what do they read, what do they write, what do they spend their money for?

Every fan envies your automobile, your summer hotels and fine soft hat, even though it top off a soft head. He can not see a much greater man by your side who has no change in his pocket, but who may have a deathless poem or mathematical demonstration in his head. He can easily distinguish you by your loud voice, good clothes and air of command; but he can not tell the other man from your lackey, and he therefore treats him the same. He can not understand excellence of spirit, although you have given him the power to adjudge excellence and pro rate its rewards.

Do you doubt this? Lying on my desk are three letters from city school superintendents thrown out of their positions within the past five months by public vote because they believed that all men, even Mr. Bryan, are related to the monkeys. These school men were all trained in our leading universities as to what is wise and true to teach our youth.

They are able, religious, brave intelligent men. Yet one writes me, "I am a carpenter and will have to go back to the bench to get bread for my wife and three children." Some centuries ago a Carpenter who did some teaching on the side, shook a good many statesmen from their seats. Another of these men writes, "They have crucified me." That same cry from this Teacher-Carpenter nineteen centuries ago was the most significant thing that happened to ancient statesmanship. The Fundamentalists might bring about the same result again.

Has it ever occurred to Your Excellency that intelligent men might call to one another, might get together, might assume, indeed grasp, your power? If your political philosophy continues to lag as it does a century behind the times even the masses, enlightened through our schools, might get rid of you as a useless expense. They came nearly doing it during the war. They might do it in times of peace. It is not altogether a fantastic speculation as to whether political civilization may be nearing its end. As one writer has suggested, scientists and teachers may become kings.

Men might be so educated that they would gladly follow that intelligence that knew how to create this civilization. Scientific intelligence did create it in the main. Seeing what this intelligence has done for their comfort, wealth and pleasure they might conclude to turn all their affairs over to the men who possess this intelligence. You were so helpless during the war that you had to call on the

despised "high-brow professor" to help you manage the machines he had invented. It may be that in time, if you do not use his inventions to create a new humanism—a new science of society—and guide your conduct by new values, that he will withhold his chemicals, explosives, power currents and the like unless you also give him control of them. The scientists may go on a general strike! If they did civilization would be distraught over night and be starving within a week. Revolutions as great as this have taken place. Industrial and political democracy present no greater shifts in social control than would result if scientists organized to manage their own creations, and made business men and politicians their subordinate officers. I think myself that scientists have not yet realized what their organized power might do. But, beyond question, it would be used for human benefit. It is a strange, a hopeful, but, for you, a portentous reflection.

But all such reflections are idle gestures if only you will keep the people looking, as King David did, at the right man. As I have so often said, a nation moves biologically, organically toward the man it is taught to look at, the man it admires and seeks to imitate. It rewards that man, gives him office, takes care of his children. Its young women seek that type of man in marriage, the young men seek that type of woman. Their very children look like him, act like him, are like him. The man a nation is taught to look at becomes in time bred into the very bone, blood and sinew of the race.

Let us ask: What kind of man is this nation looking at? What kind of man does it admire and reward with office? You are shrewd enough to set up high ideals and platforms, but the wrong man is given the reward of carrying them out. I wonder when the people will learn, as some New York preacher put the case, that "political platforms are like the platforms on a railway car—made to get aboard with but not to ride on." Certainly the political philosopher grounded in bio- and psycho-sociology and political science has never been taken aboard. He does not arrogate to himself all the righteousness of which David spoke, but he has a fair share of it. But his share and that of his colleagues, the poets, dreamers and prophets—humanists all—are not recognized in distributing the rewards of money, power and honor. Consequently his children often beg for bread. When he sees the palatial homes you provide for imbeciles and the socially inadequate, and looks at his own humble quarters and his inability to raise even half as many children as the stupid and incompetent do, through your paternal care and his expense, he wonders if it were not a blessing to be "born short." Mass democracy teaches men to look at the wrong man.

You have scarcely observed one of the most stupendous tragedies to government that has come out of your having honored unintelligence. It has changed the whole character and dignity of American government. In his *Democracy and the Human Equation,* Mr. Alleyne Ireland exhibits it in all its

ghastly certainty and nudity. It is that when, by chance and the Grace of God, a good man is elected to office, the people have become so used to unintelligence that they can not tell him when they see him. Consequently they immediately load him, bury him, snow him under, with resolutions, telegrams, letters telling him what to do and what not to do. They are so afraid they have elected a man who has enough judgment to use it, that they proceed to rob him of what little God may have given him. One-half of my mail is made up of frantic appeals from obscure individuals and unknown societies, uttering dire national disaster if I do not carry out their instant instructions: Write to your Congressman, Telegraph your Senator, Telephone the Governor, Go see the Alderman, Talk to the Mayor, Radiophone the State Legislature. Sandbag government, pure and simple! If every citizen is equally honored (or pestered) he must feel that the safety of the republic is largely in his hands. Perhaps it all does minister to the importance of being a citizen equipped with a political billy.

We are urged by self-constituted "Security Leagues" and "Guardians of Liberty" to "bring the weight of public opinion" upon legislators whom our fathers by means of elaborate constitutional provisions sought to preserve from such pressure. They expected these men would be of sufficient weight to lead, guide and create public opinion. Unless democracy can trust its aristocracy it will not outlast the next generation. Practically all

the democracy the world ever had was given to it by its high-minded aristocrats. What few reforms the French Revolution made were already in motion under the guidance of the old aristocracy. Democracy can not go it alone because it has not sufficient leadership. Aristocracy fails in sickening cycles of regularity when it loses the pressure of democracy to hold it to responsibility. This world and human nature were not made for either one exclusively. Our fathers founded an aristo-republican machinery designed to carry on an aristo-democracy of the people. It will do it if intelligence is continually called to the colors, and trusted when called. If aristo-democracy will not work, then nothing will work. Government itself is a failure and nothing is left but anarchy. Even anarchy is a noble philosophical conception, but meant only for gods and mollusks. Mollusks without backbone, and gods without temperament might make a go of it. But human nature can not, any more than it can make a go of crass, unmitigated socialism.

But, this whole modern paraphernalia, worse than that, highly organized, often secret machinery of propaganda, is expressly designed to keep intelligence from governing us, and to suppress what little intelligence we do elect. As Ireland says, we have delegates instead of legislators. We should listen to Macaulay who thought it was as high a misdemeanor for a citizen to influence the vote of a legislator as to bribe a jury. No wonder our ablest minds and most generous spirits will not accept the

position of browbeaten delegates and public errand boys. As that eminent French philosopher, Faguet, argues, our whole modern democratic machinery is especially devised to put a premium not upon intelligence but upon incompetency. As a case in point Mr. Herbert Quick shows in *The Hawkeye*—that remarkable picture of our institutional stupidity—that we have a county government in America upon which is built a state government that is the most ingenious device ever invented by the wit of man to insure political inefficiency. It at least gives us "expense regardless of pleasure" or political profit.

The biological consequences of this failure to trust intelligence is seen only when we reflect again and again, as I have so often done in these pages, that *righteousness* and *intelligence* are knit together in the very psychological and physiological fabric of mortal make-up. They are carried together from father to son in the germ cell. This being true, if righteousness is not honored as in King David's country and given survival value, then intelligence will also decline in the very hereditary blood of the people. And, *pari passu,* if you do not keep your people looking at the man of high intelligence and political capacity, the righteousness that exalteth a nation will vanish and its seed beg for bread. It is a vicious biological circle which you establish. You force the nation to drift biologically toward the wrong man because you keep them looking at the wrong man.

At this moment the postman hands me a letter

from one of the foremost living biologists stating that he has solved one of the great problems of evolution and hasn't money enough even to print the news and send to his fellow biologists. This discovery, I happen to know, may change the whole outlook of man upon his own being and destiny. Yet we can't get the money to tell men about it. But let a congressman stub his toe and the very air is filled with the news of the dreadful but important catastrophe. All eyes are fixed upon this unfortunate man. The evening paper tells of some young man, who a few months since was a bookkeeper at thirty-five dollars a week, but owing to his capacity to move his hands and feet in some preposterous way that excites rapturous merriment in the masses, a motion picture concern pays him three million dollars for three years' work. Perhaps *work* instead of *art* is the correct word. The motion picture is the first art in the history of man that depends for its livelihood solely upon the masses. It is the first truly democratic art. For that reason it can never be a great art. But it can be an enormously serviceable art and will be, if intelligently directed, another means of bringing respect for beauty, excellence and intelligence to the masses of uncultivated men. It can not create these values, but it can turn the minds of the commonest men toward them. And I think it will.

But the means of human intercourse are now so enormous that men of intelligence are bound soon to find each other and strike hands in more effective social control. And when they do, I am sure

that you will be among them. Your hale and hearty good will, your sagacious common sense, and your knowledge of the mechanics of leadership are three of the most valuable assets of civilization. They are yours by right of birth. I am only pleading that you join them with every ounce of trained and inspired intelligence we have.

If you will only do this, and then with your tremendous personal powers, see to it that no hand but that of Truth touches our public school and college, that no Protestant, Catholic, Jew, Gentile, Old Soldier, Young Soldier, Laborite, Capitalist, Radical, Conservative, Optimist, Pessimist, Democrat, Republican or Mugwump *as such,* that no special interest under heaven lays its blighting hand upon the minds of our youth, but that only the child of light and tolerance, the liberal, the truth-seeker, the brave, the free—the educator who knows no passion but knowledge and beauty, no goal but liberty, shall mold their character and outlook, then, Your Excellency, the world can and will enter, without observation, without bombs or blood, into a truly great age of the human spirit.

For the minds of a generation of young men and women, set free amid a great heritage of humanism and a great environment of science, trained to meet adequately the real situations of a real world, and with trust in intelligence as the essence of national ethics, the test of national culture and the proof of national greatness—this and this alone is the guarantee that society shall some day be free.

## THE EIGHTH COMMANDMENT

### The Duty of Art

The eighth commandment of science to statesmanship is the duty of art.

Your Excellency may imagine that art should be the last concern of the biologist, and not at all the concern of the statesman. It should be one of the deepest concerns of both. For the biologist is engaged in unmasking the causes of evolution, and you are engaged, either consciously or unconsciously, in applying them. And art is the herald of the march of evolution itself. Biology has suddenly given to art a new and incalculable significance. It is highly probable that the very face and form of civilized man have changed under its influence, because art sets up new ideals in marriage selection. And these ideals are thus transmitted in living flesh and blood to the offspring. Heretofore art has been for the dreamer's joy. It must, from this hour, take its place among the potent agencies of man's organic progress.

Art is the very flowering of the whole evolutionary process, simply because it is the flowering of the human spirit. It exists only in man—the highest level to which evolution has attained. But its biological value lies in the fact that it is man's high-

est and deepest criticism of himself. It is the final interpretation to himself of his own passions, hopes, fears, vices, virtues, foolishness, wisdom, defects, beauty—his bodily and mental potentialities and character. It teaches him what is good and what is bad within him. It lifts him to new critical levels of all the values of his own bodily and spiritual life. It inspires him to his loftiest deeds and fills him with a new and glorious fear of wrong. It lifts before him the highest possible objectives of ethics, and gives concreteness and immediacy to his religious longings. It takes the chaos, the haphazard, the mêlée of his daily life and sets it before him in ordered simplicity, symmetry and perspective. It touches his world with new adventure, teaches him to guard the heart with a new wisdom, gives new trends to thought and destiny. It leads the dejected soul forever anew to the still and holy altars of beauty and passion, gives an ever freshening lilt and joy to the moral struggle, and stamps new conceptions of life, character and destiny upon the imagination of mankind.

If, then, art be all this, and we know it is and vastly more, it must have some meaning in that evolutionary process by which a spirit capable of setting in critical perspective its own existence came to be. The biologist can find no evidence of design or ideal in the ordinary sense in the ongoings of nature. But he has been able to find scarcely any character in plant or animal which has not at some time had its usefulness, either in self-

preservation, or the furtherance of the organic interests of the race. And, on its face, it seems hardly probable that so enormous, so universal, so insistent a passion and capacity as art should not be of equally large value in aiding the being who achieved it to enhance his now conscious journey toward greater complexity of structure, economy and, therefore, beauty of movement and general excellence of being.

It is to the credit of Frederick Adams Woods to have put this supposition to the test of critical examination. His results, while not absolutely conclusive, are strongly suggestive. It is in art that we have our chiefest records of the form and appearance of the men and women of former ages. Doctor Woods has studied these records extensively in order to unravel, if possible, their biological significance. He finds certain changes in facial structure which are, at least, concomitant with similar changes in the art of portraiture. Briefly Doctor Woods finds that during the Italian Renaissance throughout the fifteenth and sixteenth centuries, the painters and sculptors of Italy produced constantly a certain type of face somewhat similar to the faces which the Greek artists so much admired and which they probably reproduced from among their Nordic co-partners in that wonderful civilization. This Italian face was characterized by a beautiful "classic" forehead; somewhat thin, delicately molded nose; low orbital arch above the eyes; almost straight or slightly curved eyebrows; the eyes

deeply set and close together; the upper eyelid scarcely discernible; and the cheeks flowing down in gently chiseled contour—the whole presenting an appearance which corresponds with our ideals to-day of a very rich and alluring type of beauty, both in men and women.

However, at the same time, the painters in northern Europe—the Dutch, Flemish, French and English—were producing a type astonishingly different. One can scarcely call the faces of both men and women left us by the painters of that period in North Europe anything but bovine. The whole face is broad and heavy; the orbitral arch above the eyes wide and flaring, giving thus a semicircular line to the eyebrows, and a lack of gentility to the forehead; the eyes are set almost on the surface of the face, indeed in some cases protruding; the eyelid is broad, thick and hangs heavily; the nose bridge is low and wide, setting the eyes far apart, and the cheek bones are high and prominent, giving much the appearance in this respect of the American Indian. The whole impression one gains is that of a race whose faces were "massive but not beautiful." It is as rare to find a delicate, beautiful face, as our ideals go, among the northern painters at that time, as to find a heavy, ugly one among the painters of Italy, Spain and southern Europe.

But note the astonishing change that took place within the following two to three hundred years—scarcely a day in the chronology of evolution. A study of the north country painters of the seven-

teenth and eighteenth centuries reveals that the proportion of faces of the delicate "Greek" or Italian type had enormously increased. I have myself, with the aid of an assistant, confirmed this by a study of thousands of photographs and paintings. By the year 1800 it becomes as rare to find an ugly, repellent, bovine face among the northern painters as it was formerly to find a beautiful, classic one. The change, whatever caused it, is unmistakable, indeed truly astonishing.

Doctor Woods has proved that the same remarkable changes have taken place in the faces of our American people. Our Puritan ancestors, in the majority of cases, did not look as we do. The faces of the present-day upper middle classes in America are much more refined and tend much more toward the Greek type than did those of the Founders. Any one by a little labor can confirm these unquestionable facial changes. The change is fundamental and anatomical, not merely a change of habitual expression, due to culture or changes in education.

Here, then, at last, is a clearly cut case where we have *caught evolution on the wing*. I might add that Prof. Karl Pearson has also with other material, by refined mathematical methods, proved that evolution is going on in the constitution of man.

Now this facial change has been caused by something. The evolution is there. We can only surmise the causes. There can be little doubt but that refinement of facial features and bodily structure are correlated with refinement of intelligence and

character. Unknown factors of variation, adaption and selection bring this about. But Doctor Woods has made the highly plausible suggestion that the influence of art—especially Greek art and ideals revived by the Renaissance—was a potent factor in this marked facial change. Raphael, Angelo, Cimabue, Mantagna and the great Renaissance painters were probably potent agents of evolution. As their ideals of facial beauty spread to the north country, they probably became much admired, especially among the upper economic and political classes who could afford portraits. Men selected as wives those women who approached this type of beauty. The ancient, bovine types were rejected. As any farmer quickly improves the beauty of his animals by selection, in this way the beauty of the human race, in all probability, rapidly improved.

Confirmation of this view is seen in the low animalized types of women among the farmers of East Prussia, or indeed any region of the world, where women are compelled to do the heavy work of men. Men come to admire the stout, broad-backed, ugly woman who can stand that sort of thing. Men do tend strongly to marry the women of their dreams. Whether those dreams be dreams of beauty or ugliness, intelligence or stupidity, determines the type of women and consequently children that will people a nation. And the character of man's dreams is largely influenced by the creations of the artist. But if you impress women into industries under unhealthful conditions, and give them work too hard

for sweet and delicate womanhood to bear you will as sure as heaven pay a frightful penalty. Womanly loveliness will vanish like a glacier before a tropic sun. Men will admire the women who can stand up under such conditions and bear children who can also endure the same brutal life. Professor Ross, of the University of Wisconsin, has long ago sounded the alarm that the American woman is growing ugly, partly from brutalizing industry and partly because you have for two generations been recruiting your immigrants from those Old World populations where men for ages have admired the low stout, stupid, ugly women who could help them pull through such frightful social, political, industrial and educational conditions.

From extensive study I have myself become convinced that this selection is going on all about us with enormous rapidity. Department store men and women, mechanics, miners, sales people and intellectuals marry each other, partly through propinquity and partly from admiration of these types of individuals. A vast new evolution is undoubtedly going on and setting up great types of specialized talents and anatomical structure, temperaments and psychological trends all through our population. This can be made either beneficial or the reverse owing largely as to how you manage industry on the one hand, so as to protect excellence and give it survival value, and as to how, through art, you educate men's and women's ideals of each other. As I have repeatedly said, men move not only politically,

educationally and socially toward the man they are looking at, but they also move biologically in the same direction.

We see then the biological significance of art. It seems to me to be tremendous. Education, ethics and religion all tend in the same direction. Industry, economic conditions, social and political customs all sweep men whether they will or no in the same great evolutionary trend. We have already seen that art has probably had profound influence in improving the physical beauty of the race. And beauty is the physiological basis of all that evolution has thought worth preserving. It is often said that "beauty is only skin deep." It is as deep as protoplasm, as inherent as intellect, as vital as character. In the large it is woven into the protoplasmic fabric of the race with all that is admirable and excellent. It is correlated with intelligence and refinement of soul. It is the one sure germinal basis of a great racial stock. It blooms instantly where given a happy soil and a congenial air. Every period when men have turned their minds to culture, and things of the spirit, beauty, intelligence and character have all flowered together with exquisite fragrance. Every high period of human splendor has been characterized by beautiful, intelligent and noble men and women. Beauty bloomed all through feudalism and chivalry. It was associated with all that meant character and intelligence. It remains to be seen if democracy will make men and women beautiful or ugly. If it fails to make them beauti-

ful and keep them so it will fail to produce intelligence and character. Unless art, vocational and humanistic education can rush to the rescue, and make beauty of body and mind the very atmosphere amid which men live, then democracy, ugliness and stupidity will all become synonymous terms.

Art is the Ark of the Covenant in which all ideals of beauty and excellence are carried before the race. Science deals with matter and energy, but art deals with life. Four-fifths of life are not in the realm of science. They are probably the best four-fifths. They lie in the field of beauty, art, imagination, dream. And it is only when art can give men beautiful dreams that they will progress in mind and person toward that "sweet fulfillment of the flesh"—beauty. For art, as nothing else, sets up rich ideals of mate-selection between man and woman. It teaches men and women what is and what is not beautiful, what to select and what to reject in each other. And mate-selection between man and woman is the supreme cause of racial glory and decline. Art absolutely creates for us our ideals of human beauty and inner excellence. And our ideals of beauty and inner excellence determine the basis of all evolution, mate-selection. Beauty is thus nature's flaming banner of her own evolution.

And if, as we have seen, ideals of physical beauty can, through marriage selection, change the faces of men, so can moral beauty, by the same process, change the minds and hearts of men. Art is thus man's highest contribution to the evolution-

ary process. Science can never create art, but it can contribute to its truth. Our artists, unfortunately, are not as a body sufficiently conversant with science. They, therefore, to just that degree give us false art, false ideals. We see, for instance, Ibsen, great poet of man's inner conflict, giving us totally false ideals of heredity. We see dramatists and story-writers giving us absurd and antiquated psychology, and thus absurd ideas of human nature. We read of stupid parents with noble, beautiful children and men of genius with worthless offspring. These do occur, but they are nature's exceptions, and easily explained on grounds of science. But they are not correct ideals for the masses.

We see our poets giving us chemistry and physics that are not of this world. Keats and Shelley, as the Cambridge biologist Haldane has pointed out, were the last great English poets who understood chemistry. Chemistry never made a poet, but it can help him to give us truer poetry. Tennyson could not have written *Locksley Hall* without a fair comprehension of Science. Even Shakespeare often gives us a wrong cosmogony and psychology. The critic unschooled in science assures us his poetry does not suffer. But the scientist knows his poetry does suffer because anything suffers that isn't true. No wrong conception can give us a right ideal. We see preachers, who should be artists, trying to make men good with a physics, chemistry, biology and psychology that belong to the twilight of the gods. Men of intelligence blush, and the ignorant man is

misled. Nearly every writer and dramatist of the world is committed to a fantastic belief in the all-powerful influence of environment. It is not necessary that artists should become scientists. Art is more precious than science. Men can live without science, but they can not live significantly without art. But artists should become familiar with at least the half-dozen great simple conceptions that lie at the bases of each field of science. Often this can be achieved by an intelligent man within a week. In the realm of art the real and ideal become one. But if his real be wrong, his ideal will be wrong. In art the real and ideal are one, just because we are in a realm of spiritual values and not scientific values. But art will be great as it gives us true values blossoming out of the soil of a real world.

The next great poet of the world, whether he write poetry, paint pictures, tells stories or builds temples, will be the man who understands these things. He will understand the real world—its chemistry, biology, psychology, human nature, organic life, its mathematical physics and modes of motion. And upon this intellectual foundation he will build for us his world of spiritual values by which a great life can be lived by great men. He will then make art seem to us what it really is—"the most exalting and despairing thing we know," —despairing because it sets us in the presence of unattainable excellence, exalting because in the same moment it fills us with a solid and energizing sense of infinite potency.

Such art will lead men forward to a better human nature. Art will then become what it should be and is, man's highest contribution to the processes of his own evolution. It will lead men by its gentle selective processes and its creative ideals toward a wiser, saner, healthier and more beautiful human race. Then, at last, in a race endowed with inborn health, sanity, energy, intelligence and beauty, the long red gauntlet of natural selection will have come to its beneficent end.

## THE NINTH COMMANDMENT

### The Duty of Internationalism

The ninth commandment of science to statesmanship and to all mankind is the duty of internationalism. As Professor Giddings has suggested in his profound analysis entitled, *Studies in the Theory of Society*, there looms before every dream and achievement of man huge, defiant, portentous, the one eternal, inescapable question: *"Is it peace or is it war?"*

If you should write upon the cover of every book, above the entrance to every school and church, above the door of every home and the cradle of every babe this black and terrifying question, "IS IT PEACE OR IS IT WAR?" you would describe the precise situation of the human species on this globe. It always has been so; it always will be. The answer has always come in the sepulchral voice of hell —"War!" Surely, surely, surely the spirit of man is capable of answering it in the angelic voice of heaven—"Peace!"

I think, Your Excellency, we can discuss this question with clasped hands, common desires, united hopes and similar sympathies. The agony of the world is too great, too much of its soil is still

wet with tears and blood for men to approach the problem of peace or war to-day in any other spirit. Yet, there is one man who, I think, can not help us—the pacifist. He might achieve a world of stagnation, but not a world of virile and adventurous peace. He would have you believe that men hate war. Do not let him deceive you with any such biological buncombe. It will lead you into fantastic and futile undertakings. You must understand and legislate for a human being that exists, not for one that does not. Men love war. They always have; they always will. "All wild animals die a tragic death." And in doing so even the timidest live one moment of superlative ecstasy. And men, in their brief moment of civilization, have not forgotten this most precious teaching of evolution. If nature had not taught every organic thing to rush to its death in one last flame of ecstatic life, the courage which makes us believe that peace is possible would never have bloomed.

I think this is basic to all discussion of this irrepressible issue. I can see no natural peace in nature. I can see only the peace of educated intelligence. Nature is war to the death. It was she who taught men to meet their "rendezvous with death" with the gaiety of wedding bells. But in doing this she had to develop within the organism two characters that are at war with war—intelligence and sympathy. Intelligently guided sympathy is our only biological hope. Intelligence and sympathy made the group possible, yet the moment the group

either attacks or is attacked they are both lost. Hate and selfishness instantly resume their primal sway. We are told by those who still live in the ancient world of 1913, "In time of peace prepare for war." Quite the contrary. In time of peace prepare for eternal peace. Prepare men's intelligence and sympathy, by education, art, ethics, philosophy, religion, by new social, economic and political objectives, so that in the hour of passion, reason and humanity will not lose their majestic sanctions to the mad terror of tooth and claw. The human spirit has bloomed out of blood and only an insistent air of intelligent humanism will preserve and spread its perfume.

There are three main biological causes for war. Deepest and oldest is self-preservation—the first necessity, therefore the first "law" of nature. Second, the preservation of offspring, and third, preservation of the group. But, within the historic period, war in the larger sense, has been mainly motivated, I think by two things: first, "the bitter cry of the children,"—the preservation of the offspring—and second, social, economic and political nationalism—the aggrandizement of the group. This is not group preservation but satisfaction of its egotism. It is the one great extra-biological cause for war, and, therefore, the most susceptible to education.

The bitter cry of the children often causes war, because children cry for but one thing, food. You and I cry for wealth, culture, economic imperialism, national expansion, upholstered furniture and fine

homes. But children cry for but one thing, something to eat. And when children have nothing to eat, nations go to war.

There are also many psychological causes of war. But the bio-economic situation of humanity can always be summed up in the very simple formula that when population outruns food supply nature leaps from her lair with her three swords of organic destiny, Famine, Pestilence and War, and reaps her human harvest. Especially does she mow down the children—the children at one end in the cradle and the children at the other end in their dotage, while the prime manhood of the nation dies fighting for food on the battle-field.

"But," exclaims the *laissez faire* selectionist, "this gives natural selection her happy chance to produce strength and genius!" True enough. But what is the use of strength and genius in a world not fit to live in?

Yet, unless through "adaptive fecundity" you do adapt the numbers of your people to the capacity of the soil to feed them, and unless through preferential fecundity you elevate their intelligence and character that they may make the most of the soil nature has allotted them, and, still further, unless by education you train them to a high cooperative life with their neighbor peoples, then this heartless, triple-headed Juggernaut, Famine, Pestilence and War, will grind on its ruthless way. By and by, no matter how beautiful your temples nor how bountiful your culture, your hungry, diseased,

bleeding civilization will go down before some other hungry, diseased, bleeding civilization, fighting for food for its children. And the thing we call "Christian" civilization becomes a travesty upon the name.

If you doubt this denouement to your brilliant social order and colossal mechanical power, let me remind you that at last our scientists have been able, for the first time, to make a truly planetary survey of the food and population problems. In a summary by Prof. E. M. East, of Harvard, which is characterized by the eminent Dr. Raymond Pearl, of Johns Hopkins, as the "most brilliant survey of the population question of this generation," Professor East points out that every civilized land, Europe, America, the Orient, has long ago exceeded the food capacity of its own soil, and is feeding its people from the uncivilized, more sparsely settled quarters of the globe. Within fifteen years, he tells us, the United States will not have a pound of food to export, unless it be in exchange for some other form of food, and that a short crop will mean the universal rationing of food more severe than during the Great War. The bitter cry of your own children for food is not so far away as you so comfortably, even egotistically think. The scientist can already hear their faint but terrifying wail in the near distance.

Further than this, Havelock Ellis, the British scientist-essayist, calls attention to a fact obvious to common sense but utterly overlooked by states-

manship. This significant fact is that throughout its millions of years on earth up until 1800, the human race had increased from its first pair to only eight hundred and fifty millions. But in 1800 the industrial revolution mechanized civilization. As a result, an enormous increment of wealth, transportation and food began. And, within the mere flash of a century, the human race has leaped from eight hundred fifty millions to nearly two thousand millions!

But, more significant still, East and Pearl have shown, the latter by brilliant experiments upon the fruit fly, *Drosophila,* and by ingenius biometrical calculations upon human populations, that the final goal of man on earth, as to mere numbers, is already clearly in sight. You talk glibly of a half billion in the United States alone. You have not reckoned, Sir, with nature. Pearl has shown that they will never reach more than two hundred millions. You think to feed them continuously from the luxuriant under-populated tropics. But, under the world-wide birth release of wealth and science, they, too, are filling up. Knibbs, a statistician quoted by Ellis, believes the world is filling up at the rate of twenty millions a year—a new France every twenty-four months. East estimates it at fifteen millions, two new Belgiums—almost two new Canadas every year! Despite every triumph of science, East believes that the whole earth will never feed more than five billion human beings, and that the day when they will all be here is not more than six to

eight generations away. Our great-grandchildren, possibly some of our grandchildren, will be numbered among them.

Three things, as Ellis elaborates, have occurred but yesterday that should give statesmanship pause. First, the industrial revolution, which, as wealth and food always do, speeded up procreation enormously. Second, the growth of hygiene, medicine and sanitation, which prolongs life, as I have shown, particularly among the weaklings. And third, the growth of humanitarian sentiment—especially under the influence of Christianity—which has again saved feeble life at one end of the scale, and prolonged its existence, and period of child-bearing, at the other. The world, then, will soon be full, but what will it be full of? When you can already sail round the earth, and can soon fly round it, and send your voice round it eight times within a second, it has shrunk from the "vast new worlds" of Magellan and Columbus, or even the "limitless prairies" of our own boyhood, to a tiny biological experiment station. And yet it is an experiment so great, so tumbling with gigantic forces, so incalculable in its evolutionary trends, that statesmanship may well stand aghast at the prospect of guiding it to anything but chaos.

What have you done so far to guide it? Wealth, more goods, more wages, power, leisure, amusement, speed—these have been your personal ideals. Nationalism and economic imperialism have been your goals of statesmanship. So-called democratic

peoples have called it more tenderly national expansion, national development. These phrases make a more soothing emollient to the national conscience. Here in America you pride yourself that you have finished the physical conquest of the continent. Indeed you have. You gave the Indian the doctrine of the atonement in exchange for his lands. You traded him cheap whisky, measles, typhoid, tuberculosis, syphilis, and a sex-morals worse than his own, for his natural resources, so long ago that you have comfortably forgotten about it. You did little better by Mexico. It merely happened that they could breed too fast to make room for you to occupy their soil. The treatment of every "Christian" nation by every other has been precisely on a par with this. It is merely typical of all internationalism up to date.

As the biologist sees war to-day, there are two great conceptions of the social destiny of man which lie back of it; first, nationalism, and second, nationality. The latter conception of nationhood, natural nationality, is the fruition of the finest things in human nature. Economic and political nationalism is the blackest, ghastliest thing that ever stalked with its blood-spattered seven-league boots across this fair earth. Nationality, as pointed out by that most brilliant of our social philosophers, Everett Dean Martin, is the flower of all that is most distinctive and unique in the cultures of the world's varied peoples. As suggested by Glenn Frank, it makes "cultural nationalism," as opposed to politi-

cal and economic nationalism, the proper ideal of every state.

A man naturally loves his country. It may be poor but it is his own. He loves the rocks and hillsides, the breezes that blow across them, the trees, the very vegetation amid which he was born. He loves the old home, its folks and folkways; he loves the path he trod to school, the schoolroom, the college, the university. He loves his nation's art and literature. They give him nearly all his world wisdom and criticism of life. He loves his country's history, although so far his school-books have been too much steeped in the records of its nationalism, instead of its cultural development and spiritual conquests. But these things make up nationality. A man will fight for them, and he is a poor thing if he will not. They are the things men live by, love by, die by. They ought to be. This earth offers nothing richer.

There be those who for all this would substitute a "World State." Mr. H. G. Wells has, I think, set out for inspection all there is to this conception. Its romance appeals much more to Mr. Wells' imagination, I think, than its common sense will appeal to the judgment of mankind. I am opposed to it for six distinct reasons, any one of which I believe fatal to such a fantastic project.

First, it is beyond the intellectual power of mankind. Evolution does not throw up leaders fast enough to carry it on. It would require the continuous presence in the world of Genghis Khan, Peri-

cles, Alexander the Great, Cæsar, Napoleon, Lincoln, Roosevelt and Henry Ford, all working together with the spirit of the Twelve Apostles, with the immediacy of a social heaven before them to make a go of it.

Second, there is no existent psychology to-day to build it on. Nobody much wants it. The vast social ardors and political enthusiasms necessary to put it over, even for trial, simply do not exist. I beg Mr. Wells to point to any evidence of them anywhere.

Third, "liberty," as Edmund Burke said, "must inhere in some sensible object." So must all loyalties. Men require something which they can touch, see, feel, something which their imaginations can enclose. Men can be loyal to their homes, their county, state or nation because they are theirs. They are personal possessions. But men can not possess a World State even in imagination. They can't belong to it. They could nearly as easily be loyal to the planetary system. Men will fight for a red or white rose, but not for the size or color of the planets.

Fourth, it would not only fail to create the new loyalties necessary, but it would destroy the old ones —the great deep loyalties of nationality—all those nourishing things that give uniqueness, distinctiveness, picturesqueness, peculiarity and quaintness to the inhabitants of each separate nation. These are too precious, too interesting, too native. No people would ever give them up. They give frag-

rance to a people's life—they are its essence and perfume, if you please, its local color. They constitute the personality, the national character of any people.

Fifth, the benefits, even in theory, of a World State are not obvious enough to make it seem a fair exchange for the rich possessions already in hand.

Sixth, I think it biologically and, therefore, politically impossible if man is ever to progress toward richer inborn endowment, or even maintain his present organic level. It would shortly plunge the world back into savagery. This latter is because, as emphasized by Prof. Edward A. Ross, national boundaries prevent the peoples of lower development from wandering and migrating en masse hither and thither over the earth, pouring their mongrel blood into richer racial streams. With indiscriminate mixture of all peoples three things would result: first, a lowering of the blood of the enterprising pioneers who discovered and developed any country; second, a lowering of morality, of social and cultural standards; and third, a lowering of its political efficiency with a resulting chaos in its economic and political machinery. The latter two are certainly beginning to show up in America, owing to its low immigrations of the past two generations.

Nations can not progress to any high standards of social life, gentility and polish, nor to any ordered working of political institutions, without a homogeneous national mind, a common racial outlook, similar cultural traditions, common language

and literature. In short, there must be a national like-mindedness, which is the outcome of biological like-mindedness, inner similarity of physio-psychological organization. The fact, as witnessed by the writer, that during the great Dayton, Ohio, flood, many of the foreigners of lower cultures, and doubtless of inferior racial make-up, had to be forced to clean the mud from their beds and houses at the point of the bayonet, is a poignant national reminder. This has a world political significance. Those who recklessly think the mining of a few more tons of coal, or the manufacture of a few more pounds of steel, is worth this price have reckoned in dollars instead of national character. This lowering of the bars of our American development which was rapidly trending toward unique, picturesque national individuality in art, politics, social life, education, folkways, speech and literature has probably robbed us forever of our manifest destiny. We had clearly before us to become a greater Greece, a grander Rome, a more puissant England with a still nobler influence. We are the children of these cultures and should enrich them. With wise statesmanship, we may do it yet, but you have thus infinitely delayed such a consummation.

The ideal, therefore, of nationality which should be wrought into the fabric of all social thought, is that of a stable population in every nation, whether large or small, of very great racial homogeneity, constantly balanced between numbers and food supply, developing its national personality and slowly

elevating the biological quality of its people by every eugenical agency. With nationalism rampant, permanent national eugenics is impossible. With a world state it is equally so. It is only those who do not understand eugenics who advocate such a scheme. A world state would not end war but promote it. It would not speed up evolution but largely end it. You must set up immigration barriers or the development of unique and virile peoples is impossible. And the moment you set up immigration barriers, as Ross has pointed out, you are back into the old nationhood again. And whether that nationhood becomes the rich fruition of character and culture of nationality, or the damnable, blasting, war-breeding thing of nationalism, depends wholly upon the intelligence and idealism that animates the statesmanship of to-morrow. Nationality, coupled with cooperative internationality, is the biological as well as the cultural, economic and political hope of mankind.

Do not imagine, therefore, Sir, that the biologist is looking forward to some new baptism of brotherly love descending upon men; or that the world is suddenly going to become a mutual admiration society. Men in the mass will not keep the peace unless they are forced to. Nations are made up of crowds, and crowds have to be watched and guided. For a long time yet, occasionally somebody will have to be shot and others hanged. The more the national ringleaders in such cases can be haled into court, and this salutary process personally admin-

istered, the more rapdily will international peace progress. Had a dozen of the right men, not all of them in Germany, been shot in 1913, when it was obvious they were starting out with intent to kill, the war would not and could not have occurred. The world is to-day allowing a great many of these arch-criminals to be at large with nothing more effective to restrain them than pious resolutions of peace societies and prayer by the churches on Sunday.

But the more the mad license of nationalism can be, by force, moral suasion, education and the development of practical international agencies, reduced to the liberty of free nationalities under duly enforced law, the fewer the hangings and the farther between. But there is no evidence that either the tongues or spirits of angels are about to possess mankind. Internationality will come only by hard work, virile thinking, immense tolerance and patience, and education. We can not as yet safely lay the big stick on the shelf, but we can enormously reduce its size and make it an international instead of a national weapon. In the end the chief weapons of internationalism are books, not cannon; exchange professorships, not poison gas; commercial cooperation and rationing of world-resources, not cut-throat competition; business, not bullets. But this ideal will come about neither through a world state, nor a sudden baptism of brotherly love, but through a rational education of man's present psychology and the direction to more intelligent ends of those agencies and institutions of national life which alone

will express present human nature and give it its natural satisfactions.

Finally, then, it is evident that even a scientific civilization, if it be only national, will soon be crushed by war. It will never make war, but it must defend itself. Internationalism is no longer a theory but a condition; not a dream but a necessity of national existence. No nation, therefore, can remain civilized until all nations become civilized. As a selective agent for killing the unfit and preserving the fit, it is probable that modern war has scarcely more survival value than an earthquake. And just as earthquakes are going out of fashion, so must war go the same way. Your nationalistic slogans, ambitions and power propagandas are not only not sufficient unto a world order, but they are not even sufficient unto a permanent national order.

Moreover, as I have shown, these vast problems of race migrations, mixtures, hybridizations, and the pressures of populations upon food, no matter how many times you multiply your food, will tomorrow tax all the genius, both of science and statesmanship. Biology has exploded the myth of the melting pot as it has the myth of war. Each race and nation must still continue to create its own culture, its own national or racial psychology, its own specific intellectual discipline. But if one culture is to continue to crush another by war, or if great spiritual disciplines are to be lost by the hybridization of strange and disharmonic peoples,

all civilization will periodically go down in the biological holocaust. It is only the abounding development of humanism amid the free air of individualistic, distinctive, undisturbed nationality, free because it is free from the fear of war, free because it has espoused the scientific spirit, free because it has thus developed the power and passion to create for all mankind a true world-wisdom through the friendly fraternity of nations that will ever give this blood-drenched, but still "moonlit and dream-visited planet" a virile, virtuous and adventurous peace. And to attain this freedom, your narrow nationalistic patriotisms, loyalties and ambitions must merge—not disappear, for men must not become stagnant—but merge into the larger loyalties, the wider moralities and the higher processes of the unitary development of man.

## THE TENTH COMMANDMENT

### The Duty of Philosophical Reconstruction

Unless the miracle should happen that statesmen become philosophers and philosophers statesmen, it is no part of your direct duty as a statesman to reconstruct philosophy. This would probably be to you an alarming undertaking. But it is your very pressing duty to reconstruct many of your ideas of social control, so as to take account of the radically changed view of life and the world, which the philosophers of modern science are rapidly giving us. Should the philosophers take their new views directly to the people—should John Smith, for instance, get wind of this new universe and new way of looking at life, belief and conduct, before you see what is going on, to put it plainly, it may be all up with you.

The prime difficulty, indeed the genuine danger, is that you seem to be proceeding as though nothing in the intellectual world had happened. You are apparently proceeding as though all that had happened to make this age different from any other, was merely a few inventions for making money. That science and its philosophy has brought men the possibility of a new kind of life, new ethical, spiritual, social and political values for which to

live has apparently never entered your mind. In reality not new sources of profit but new sources of life are about the only things of any importance that have happened. But you have, so far, been so engaged with the former that it seems you have scarcely seen or felt the latter. At least you are not utilizing its copious political inspirations as you could and should. Both you and John Smith, I fear, are still viewing this whole new environment of science mainly with mere primitive wonder. As to its revealing any new inner meanings of life itself, it might as well have all dropped out of heaven. It has scarcely changed your habits of thought at all. We are thus in danger of living through a whole age of intellectual conquests of untold practical significance without their immense spiritual and ethical significance being perceived or utilized.

But, in truth, the very intellectual framework of the old time is falling about our heads. The first question for the statesman is: What can and what ought we to save from the wreckage? The second is: What can we build from the new? Can enough be salvaged from the old, and enough used from the new and be taught to common men so that they may act together toward more efficient social and political development? To aid you in answering these questions is the new task of philosophy.

And philosophy, Your Excellency, is undertaking this task with a splendid ardor and with high intellectual abilities. Philosophy, as James maintained, is mainly the record of the temperaments of the men

who have written it. But in our day philosophy has changed from being the pleasing dialectical and temperamental entertainment of a few men into the vital concern of all men. It has ceased to be the innocuous pursuit of metaphysical abstractions by men far from the world's affairs, and has become the earnest searching by earnest men for the new and illuminating values by which every-day people may live better every-day lives.

May I enforce this argument by a simple personal experience? At this very moment I have just returned from a reception at a country golf club. It was made up of people from "Main Street," that sound upper middle class, the return of which to power and influence I believe, with John Corbin, would mark the turn of this democracy toward sound aristo-republicanism. But their conversation was not far different in its spiritual essence from what it would have been a generation ago.

However, I sat apart with three young men from the State University, and their philosophy is the thing out of which the coming generation will be made. One was a grocer's son, one a butcher's son, and one the son of a lawyer. One was studying commerce, one engineering, and one law. But they did not talk much of these things nor of the things of Main Street. They talked eagerly and keenly of the new ethical implications of the philosophy of naturalism. They ran easily and clearly over the main positions of the great men who are making that philosophy. The grocer's son suddenly asked

me: "What do you think have been the main ethical trends of the past generation?" Certainly an imposing question. But by way of answering it himself, he outlined a thesis of astonishing significance and coherence. It was but yesterday that I knew all these young men as little lads in knee pants. And now they are our coming philosophers of common life. They are no more thinking the thoughts nor looking at life in the same terms that their fathers and mothers did than Jesus looked at life through the eyes of the Pharisees. A change is coming over the world—an intellectual change. Things are going to happen with a quarter of a million of these young men pouring continuously through our colleges, provided that the colleges are left free. And just as you see that our schools, colleges and universities are absolutely free from economic and political domination, will these young men help the world to release its spiritual energies to the ardent allurements and importunate enthusiasms which are inherent in the new philosophical orientation of men's minds in a real, instead of a wish-fancy world.

But no one can in the least blame you for your past contempt of philosophy. You have looked to it in vain for any practical aid. Plato, as an instance, gave you an Ideal Republic where only gods and slaves could live, but it does not help you to get out the liberal or conservative vote on a rainy election day. Hegel gave you a philosophy of history of no value for predicting the effect of compulsory education of plumbers, or of a League of Nations.

And Spencer set up an "evolving social organism," which, with or without effort on your part, would gently but firmly shove the world forward. Yet, you might, for all that, be warned of the immense political effects of philosophy by the fact that the English Empiricists were immense factors in the political revolution of English liberalism, and the German Idealism managed to link itself up with a biological realism without which Germany may never have embarked upon economic imperialism. At least Dewey has shown the profound impact of philosophy upon the whole sweep of *Welt-Politik*.

You have not believed the things of philosophy because most of them were probably not true and only "interesting if true." But in our time, not only has science taught us how to study and utilize matter and energy, but philosophy is rapidly teaching us how to view them, how to live in a new way with them, how to gain a new life for ourselves out of them. This is a remarkable thing—a new mental phenomenon in the world. Philosophy has become an effort to give to the common man a new kind of life, a better, richer, more manifold life. The men engaged in making it are desperately in earnest, desperately desirous of aiding you to give men more to live for. They wish respectfully but eagerly to give you new social and political objectives, new ways of viewing truth and evaluating experience, of curing ancient evils and teaching men new virtues.

So far, however, you have held yourself aloof.

If you suspected a man were a philosopher you have seen to it that he was not elected to office. Such a man could not be "practical." He could not frame helpful railroad legislation, nor devise means for securing higher wages, lower freight rates or shorter hours. It has seemed not to have occurred to you that he might teach men better railroad philosophy, teach them finer things than high wages or shorter hours, or else better what to do with their wages and leisure when they got them. You "know your business" and "business *is* business." Granted. But history shows that often men with very poor transportation have lived very rich lives, and men with very low wages have lived very lofty lives, solely because philosophy had taught them what things to value most and what things the least.

Men always seek what they think is the most worth while. And whenever men have dwelt amid lofty idealisms it has somehow always resulted in better transportation and wages, because it has taught them how to act more efficiently together for higher values than merely securing more butter on their bread. But you are in danger of passing through a most notable, if not a great age, with nothing to show for it except more butter on people's bread. Indeed, whether it turns out to have been a great age of butter or a great age of life depends largely upon whether religion, art, ethics and philosophy can give men, through your wiser social and political organization, more bountiful inner values of beauty, gentility and interest for which to live.

So far, not only have you been apathetic toward these higher values of a free-thinking, free-ranging philosophy, but the church has leagued itself with you to prevent men, at all costs, from tapping the higher levels of life, which science and the philosophy growing out of science would give them. As I have already said, you do not trust your youth to learn anything new. You are afraid to trust free intelligence, lest it relieve you of your office. The church has done the same thing. Indeed it casts "a dim religious light" over the whole range of modern problems. So far it has not solved a single large human problem. It is still the sworn enemy of intellectual liberty—the only liberty there is.

Both Catholic and Protestant churches, have, in the main, used all the threats of the orthodox hell to prevent men from thinking freely and bravely about life. Science has given men a new universe, but the church has not given them a new religion, nor a new ethic to fit it. Science has given men electric cars, hot and cold water, safety razors, chemical dyes, and both chemical and biological medicines, but the church has fought every effort of philosophy to teach them the new kind of life by which safety razors and chemicals have sprung from the few unique intellects and imaginations that discovered and invented them. It took a new and extraordinary kind of life to find these things, but the church has threatened men with hell if they sought to attain that rich, free, adventurous life for themselves. Philosophy is tumbling with enterprise and

excitement to evaluate for men this new world to which science has opened wide the door, but the church is trembling with equal excitement lest men enter the door and leave it behind. They may do just this, unless the statesman and churchman also enter that door and work with the scientist and philosopher to enrich not only industry and commerce but also human life with the nourishing expanses of this new and open world.

If we throw the present situation upon a historical background, according to Everett Dean Martin, three things in man's intellectual life have progressed, and three have not. Art, philosophy and science have all progressed, solely because freed intelligence has been applied to them. Morals, religion and politics have not progressed because freed intelligence has scarcely touched them. Careful scrutiny might reveal here and there minute items of progress in these, but they have not, as the others have been, the outstanding things that have characterized, indeed made, great ages in the history of man.

In fact, the chief claim of religion and morals is that they derive from more than mortal wisdom, and can not by mortal wisdom be advanced. Finite minds dare not tamper with something directly revealed by the Infinite. But, as I have tried to show you, Sir, morals derive not from the Infinite and Eternal, but from the finite and temporal, that is, the effort of men to act intelligently together. It should, therefore, be the one thing above all others

to which intelligence should be addressed continuously in order to stimulate growth, change, improvement. Politics, on the other hand, as Mr. Alleyne Ireland has shown, has derived from four sources, namely, fear, superstition, vanity and gullibility. First, the strong man ruled by inspiring fear. Second, to aid him, in a tight place he had to take in the priest which added superstition. Third, he had to take in the nobles which added vanity, and fourth, he was obliged to take in the people which added gullibility. Gullibility in government is now at flood-tide throughout the world. Surely these mundane shores never had to endure so much of it at any one time.

But all this need not create in you supreme uneasiness. The outcome will depend upon whether you can give gullibility the right kind of a philosophy of life to swallow. Its capacity to swallow inane incredibilities passes belief. Recently, in New York City, I listened for an hour to one of the High Priests of Gullibility lecturing to a great audience on "The Higher Life." The higher his life soared, I confess, the less was I able to follow it. But the audience was enthusiastic; consequently, I concluded that my lack of comprehension was due to my not being among the initiated. Finally the speaker, striking the pose of Elijah starting heavenward, and lowering his voice to a solemnity not of this world, imparted the following startling information: "We are at last standing," he said, "in the realm of the disharmonic unthinkables." The audi-

ence sat breathless for a moment and then, as the unthinkable joys of this disharmonic realm of bliss dawned upon their dazzled vision, they burst into ecstatic applause.

Now while these were extraordinarily well-dressed people I do not think they were extraordinarily stupid. I think they represent the cream of our half-educated gullibility. They are the people who telepath when they could use a telephone, and who follow hunches when they could easily ascertain the facts, and prefer vague guesses to thinking things through. But the hope of the world, I think, lies in the fact that they can be truly educated. I feel sure that if our education can be utterly freed from dogmatic religion, political gangstering and economic domination, that enormous numbers of these people can be taught in childhood sound logical approach to the world's idealisms as well as its realities.

The passion of these people for real knowledge is positively pathetic. They build marble temples and hire high priced speakers to provide them with expeditious short-cuts to knowledge. Many of these speakers call themselves "philosophers," and "psychologists." Especially do they apply to this metaphysical histrionics the magic word just now for conjuring dollars from gullible pockets, "applied psychology." Some even assume the mantle of prophecy. But they are little short of educational gunmen or philosophical popguns. They lack the logical coherence of ordered thinking, which

alone can give men sound philosophies—philosophies that enlighten with an intelligible realistic idealism, instead of muddling men's minds with mystical hallucinations which are merely the frothings of their own intellectual chaos. Being blind themselves, they lead their blind but trusting followers into the ditch.

I am convinced that at the touch of real truth, the eyes of average people could be opened and trained to envisage true perspectives. I am convinced that they will accept credibility as enthusiastically as they now accept incredibility; that they will accept a philosophy that is harmonic and thinkable as readily as one that is disharmonic and unthinkable. This is something which profoundly concerns the statesman. For ignorance that accepts its ignorance is not half so dangerous as half-educated gullibility that mistakes itself for knowledge and *acts upon it.* Riot and revolution are the children of half-education that mistook itself for knowledge and carried it into action.

And to you, Sir, nothing is more pressing and immediate than that you should aid the philosopher in throwing wide open to the common people the doors that lead into the great philosophies of life and reality that are flooding the scientific and philosophic world. These philosophies are capable of bringing to men new understandings of this strange, all-pervasive environment which science has suddenly thrust upon mankind.

Unfortunately, at every previous period of his-

tory when it seemed that philosophy was just about to open a new door for men to enter into a true intellectual and spiritual as well as ethical liberty, democracy on the one hand, and dogmatic faith on the other, have risen and hurled them back into intellectual night. For a thousand years, following the last free-thinkers of the Roman world, Seneca, Marcus Aurelius and Cicero, men closed their minds and wandered in darkness through those weary centuries when faith replaced reason and authority usurped logic. And I warn you, Sir, that every time that free philosophy has lost its hold upon the world, political civilization has gone to pieces. "Dogmatism," as has been truly said, "is the effort to make the living faith of the dead, the dead faith of the living." And if the statesman fail to provide that social and political freedom which enables the philosopher to teach a free and open philosophy of life the Fundamentalists, by whatever name they may assume to cloak their real purpose, will destroy every new philosophy and every new spiritual and ethical discipline which a free questioning of nature may build. And when they do, political development will itself follow into the night of that dogmatism where its living and growing faiths will be replaced by faiths and governments that satisfied the dead ages of the world, but which furnish only prisons and oppression for enlightened men. When dogmatic faith, authority and mass democracy replaced its free life and philosophy, there happened in Rome the saddest

thing of the ancient world. The people lost their way to the baths which their noble forebears had built to keep them clean, and forgot even their language, so that they could not read the inscriptions that told them what these buildings were for. And should the living faith of the dead take possession of our world and become the dead faith of the living, nature has no reprieve and history knows no forgiveness. Our course may be illuminated with the triumphs of electrical invention, we may even ride into the night in ships of the air, but darkness will settle about us just the same. If man's head can not guide his heart, then his heart must always beat in anguishing darkness because his eyes refused to see ahead when they could.

Philosophy, then, is a prime concern of the statesman. When you think it is something remote from "human nature's daily food," you are thinking of its classic, metaphysical, dialectic and epistomological puzzles. You might remember that even these kept our Puritan forefathers in a high, even if futile, state of intellectual excitement. But the heart of the commonest man is always crying for some key with which he can open the mysteries, something he can rely upon to test life by. And the key he finds, the key which his superiors give him—that is his philosophy. As that occasionally wise man, Mr. Chesterton, says, "The most important thing about a man is his philosophy of life." "No one of us can get along," says Professor James, "without the far-flashing beams of light which

philosophy sends over the world's perspectives." And with what pervasive immediacy it should be borne in upon statesmanship that it should link itself with those gallant minds and intrepid spirits that, with utter contempt either of authority or of what men thought or did yesterday, are seeking to give us a true perspective of this tumultuous environment which, like the Revelations of St. John, has been suddenly let down out of Heaven!

## THE TENTH COMMANDMENT

### The Duty of Philosophical Reconstruction—continued

I am not assuming, Your Excellency, to decide here, for you or any one, the truth or untruth of any one of the many philosophies of men. Many of them are true. None of them founded upon intelligence is entirely false. I am merely pleading for philosophy's privilege in a democracy. I do not know what philosophy is true. I only know that unfettered philosophic thought is the only thing that can lead us to the things that are true. And I am pleading for the importance and influence of truth, and that it may be in our time bravely lifted up for all men.

However, if I am to trust my extremely diffident interpretation of Prof. John Dewey, science and the critical speculation that has come into the world with it have given three great new trends to philosophy, all of which, I think, are of great importance to statecraft.

First, philosophy has changed as to its theory of knowledge—the very nature of the knowing processes of the mind. Biology has made this contribution. From the old notion that knowledge was built up out of independent sensations, that is, that

the senses were the gateways to knowledge, biology has contributed the new conception that knowledge is behavior, the reaction, the "hitting back" of a living organism upon its environment. Knowledge thus becomes the active, operative experience of an organism carrying out the rich possibilities of its inherent structure. Not to go into technical jargon, all the old psychology that underlaid both the rationalism of the rationalist and the empiricism of the empiricist is thus so completely exploded that we can hardly realize what has become of it.

Second, this change as to the nature of knowledge has brought enormous changes in our conceptions as to the nature of truth, as to what truth is and what is true. We find that truth is, in the belief of most philosophers, merely trustworthy experience. Indeed, we find that truth and the way we gain knowledge are quite bound together. The old notion of a realm of unchangeable truth out in the sky somewhere, has become transformed into a conception of truth as working, practical, verifiable experience. Thus the old battle between the real and ideal, subject and object, experience and reason, noumenon and phenomenon have become strangely obsolete because they are seen to have no practical consequence.

Third, this changed view of the nature of knowing on the one hand, and of the nature of what we can know or truth on the other, has changed three-fourths of the problems with which philosophy is concerned. It has brought philosophy down out of

the clouds. Its problems have become the problems of this world, the practical, the here and now. Truth is no longer conceived of as some mystical stuff to be apprehended only by a "synthetic faculty of super-empirical reason," as the rationalists thought, nor merely sensations bound together in particular experiences which tell us nothing of universals, as the empiricists thought. Truth is found to be merely "experimental intelligence," an "intelligent administering of experience, an affair primarily of doing," "intelligently thought-out possibilities *of* the existent world which may be used as methods for making over and improving it." Philosophy thus ceases to be an "intellectual somnambulism" and becomes a new method of facing "the great moral and social defects from which humanity suffers, . . . of clearing up the exact nature of these evils and developing a clear idea of better social possibilities." In short, philosophy in this new sense seeks to give men "an idea or ideal which, instead of expressing the notion of another world or some far-away unrealizable goal, would be used as a method of understanding and rectifying specific social ills" in this present, real world about us.

This is a tremendous thing. The history of man has been mostly the history of his ideas of truth and the world he lives in. And modern philosophy is introducing us into totally new ideas of both. Some of these new conceptions have led many of our ablest minds to a thoroughgoing mechanistic inter-

pretation of life and the universe. Some have been led to a somewhat more flexible pragmatic naturalism, others to various philosophies of relativity. But the prime point is that at last truth itself is found to be merely a way of apprehending and comprehending the universe, and how men can bend a natural universe, without aim or ideal in itself, to their own aims and ideals. "Pure Being," "Perfection," "The Absolute" and the like, of which our disharmonic unthinkables, previously diagnosed, talk so glibly, are in this view merely thought-out possibilities of man's own perfecting of himself and becoming something better—that is, conceiving finer values and realizing them in experience. It all takes man out of the comfortable closed world, where he could lean on eternal truth, and throws him out naked and alone into an open world where truth is not something handed to him gratis, but where truth is something to be achieved, a world, in fact, of mental daring and fearless experimentation with the universe and with his own life.

Now it is a prime problem of practical statecraft as to just what John Smith would do, should he find himself suddenly hurled out into this unfenced world. The philosopher can stand a world without a fence around it, and as cold as starlight. But Smith longs for visible safeguards, and the warmth of the sunshine. Many times when the esoteric philosophers and religious teachers have believed there was no such world, they have told him there was, and furnished him ritualistic fences about it to

convince him of its truth and solidity, in order to exploit him more easily. Smith may not have the high courage to endure philosophic fear. For it was a fine remark of Professor James that "No man can speak of life who has not felt the fear of life." Surely the optimist can not speak of life: he has never known its abysmal depths. No more can the pessimist speak of life: he has never known its perilous heights. Nor can the dogmatist speak of life; he has never known spiritual liberty. Only he who has *lived,* whether cowboy or philosopher, can speak of *life.* It was Horace Walpole, I think, who said he "would rather the future would inquire why they had not built a monument to him, than to inquire why they had." Optimist, pessimist and dogmatist can have but one reason for monuments—that they died. But only he who has adventured with life, fought his way sword in hand into its forbidden realities can have a monument because he lived.

It was this sense of truth and life in which the poet Lowell, in perhaps the noblest note ever reached in American song, celebrates the unreturning brave of our Civil War.

"Many loved Truth, and lavished life's best oil
Amid the dust of books, to find her,
Content at last, for guerdon of their toil,
With the cast mantle she hath left behind her.
Many in sad faith sought for her,
Many with crossed hands sighed for her;
But, these, our brothers, fought for her,

At life's dear peril wrought for her,
So loved her that they died for her,
Tasting the raptured fleetness
Of her divine completeness—"

The pragmatist might add, without quibbling, in the words of Matthew Arnold, that truth's "divine completeness," as Lowell plainly recognizes, was not "a having and a being, but an eternal becoming." To the naturalistic pragmatist, at least, truth is not, as Mr. Bryan conceives it, an eternal resting on the bosom of God, but something to be hourly achieved at the very peril of losing the universe. True, he who fares forth from the Rock of Ages, cleft once and for all for him, will find this search for truth an arduous enterprise. He will miss many of the old comforts of home. He will miss Mr. Sunday and Mr. Bryan's old armchair of faith in the eternal verities, and the bedrock truths of Fundamentalism. He will miss the flowery beds of ease, the salvation handed to him gratis, because some one else's sacrifice and blood and piercéd side has atoned for his sins and brought forgiveness for his misdemeanors. Nature knows no forgiveness, but only glorious possibilities of new experience to every soul that really thirsteth after righteousness, and will dare the experience necessary to gain it. She knows no atonement, but only the use of present material means for realizations of new and always perilous possibility.

For the high philosophy of science gives a man no resting place in the everlasting arms, but in

its stead, the gay enterprise of breaking open the door to every mystery, and gaining new mysteries deeper than any of which the somnambulistic mystic ever dreamed. He knows no peace except the peace of abandoned daring, no salvation except the rapturous gaiety of utter adventure. This, to him, is the peace that passeth understanding, because it gives him new understanding, the virile understanding of the happy warrior in the forgetful moments of battle. This was the kind of peace that came to Jesus, and that came to Nietzsche, bravest soul since Jesus—a soul gloriously wrong perhaps in many details of technical knowledge, but gloriously right in his fearless questioning of the universe, and his own soul. Truth, to the new philosophy, is not some eternal sunshine—some place "where it is always afternoon," some raptured sweetness of divine completeness, except in the sense of a raptured becomingness of a new day with all its possibility and peril.

## THE TENTH COMMANDMENT

### The Duty of Philosophical Reconstruction—concluded

Within the past generation there has come, as I have noted, especially into British and American philosophy, an increasing tendency toward naturalism. Let us see how some of its concepts may strike John Smith when he *first* hears of them. I am not concerned at this moment with whether they are true or not.

In this philosophy of naturalism, the universe stands revealed at last in all its gaunt nakedness, as a mere machine without sympathy or purpose. Man is found to be a brother not only to the brute but to the clod and crystal. He sweeps for a brief moment round his little orbit, and passes into the trackless void with the same mechanical precision as the stars. Life, itself, instead of being the warm and pulsing thing which we have thought, is believed to be a mere phenomenon of matter. Indeed, matter itself has disappeared, and the mechanist finds nothing but force—a world of electrical points which, by their infinite permutations and combinations produce that transitory illusion which we call life.

That this is not the view of insane men, but one

of the loftiest and most daring adventures of the human mind, is in evidence on every hand, and it is laying its hold mightily not only upon many philosophers, but is being taught as a more commonplace by many teachers in the colleges of America and northern Europe. Of course not all philosophies which have grown out of modern science are mechanistic, nor do they all deny the existence of "spirit," or a spiritual world. Many philosophers still find a world of ideal values above and beyond science, which they regard as being as truly real as the findings of science itself, but scarcely any of them find any place for the old crass spiritualism or supernaturalism by which the masses of men have lived from the days of charms, totems and ghosts.

For instance, Nietzsche finds ultimate reality in the will and could hardly be classed as a mechanist. Nevertheless, he proclaims in *Zarathustra* that "God is dead" and in His place a true world picture has nothing better to offer to the common man as a present help in time of trouble than the barren conception of a super-man who can take care of his own troubles. Bertrand Russell, George Santayana, Viscount Haldane, Earl Balfour, and many others, while holding different technical philosophical positions, yet give us well-nigh as dismal a picture of man's place in the universe.

Dr. Irwin Edman, of Columbia University, one of the most brilliant of the rising generation of pragmatists, boldly, or perhaps I should say brave-

ly, teaches his students that "man is a mere accident"—the most interesting and self-interested accident, no doubt, which has yet happened to matter but, nevertheless, an accident; that "immortality is a sheer illusion," and that "there is practically no evidence for the existence of God." Indeed, God, heaven, immortality, as John Smith thinks of them and as he and his family worship, sing, pray, and build churches to them, are well-nigh eliminated from modern scientific thinking or critical philosophy.

Everett Dean Martin, Director of Cooper Union in New York City, who conducts the largest class in philosophy in the world, and probably in the history of the world, unless it was Abelard, with his twelve thousand students, can not be classed as a mechanist. Yet he informs his students, many of them labor leaders of the most earnest type, that "religion is primarily a defense mechanism" which man has built up subjectively; "a compensatory fiction for an inner feeling of inferiority," "a device for importing symbols into a world of fact;" all not with a view of finding reality, but of continually "keeping up his courage with a picture of a universe run in his private interest—a universe as he would like to have it." He finds religious symbols such as salvation, the Heavenly Father, angels, devils and the like to be "different in degree but not in kind from the Freudian defense mechanisms of the paranoiac," an effort of man to create a purely imaginary world which will furnish him an escape from the hard realities of life.

We hear Prof. John Broadus Watson, of Johns Hopkins, leader of the behavioristic school of psychology, telling his students that "freedom of the will has been knocked into a cocked hat," and that such things as the soul, consciousness, God and immortality are merely mistakes of the older psychology. These are only random examples. It is, I think, safe perhaps to assert that a majority of all biologists, psychologists, physicists and chemists, and critical thinkers generally, are either thoroughgoing mechanists, or have espoused some form of pragmatic naturalism, or new realism; or else they advocate some form of pragmatic idealism which finds little or no place for the old homey supernaturalism which has comforted Smith for ages. One could at least run over many great names who have come out boldly for at least a non-supernaturalistic view.

A few biologists, such as J. A. Thomson, author of *Animate Nature* and *Outlines of Science*, and Hans Driesch of Germany, are still valiantly holding the old citadel of vitalism and a more spiritual view of the world. Also many of the older philosophers, with perhaps Bergson leading, are launching some of the most brilliant dialectic in all philosophical history to prove that science itself is but an instrument for adjustment to environment, and that, on the basis of intuition, philosophy may establish a world of spiritual values. But for all this, unvarnished naturalism seems to be rising in tide and volume throughout the thinking world. If I am

wrong as to this, nevertheless the old comforting, home-made universe of Smith has, I am sure, almost completely vanished from the purview of men of critical thought, at least those who have had a thorough, modern, scientific education.

But I repeat that I am not concerned here with the truth or untruth of these various pictures of the universe, life, reality and destiny. I may not have even expressed in perfect metaphysical terminology and with dialectical nicety the various viewpoints as the philosophers would express them were they to talk with Smith themselves. I am not a professional philosopher, but merely a student of biology, looking on with profound interest as the new philosophies growing out of biology and science generally are going by. What does concern me profoundly, however, is their social, economic and political effects.

The social and political impact of naturalism, for instance, has already been enormous and unmistakable. As far back as Bentham and Mill, it shot its cold and comfortless gleams through political economy and social science. It animated Spencer's sociology, psychology and system of ethics. Prior to 1914, it had swept into industry, profoundly affected both capitalist and laborer, given its impulse to nationalism, and colored the entire picture of world politics. It is probable that the future historian will find the World War was a conflict of two philosophies, not as President Wilson thought, merely philosophies of politics, industry and the State, but philosophies of life and the nature of

man and the universe itself which lay behind these conflicting views of political and social organization. Some of our ablest psychologists believe that the despair which settles down upon average minds which have not been prepared for it by a proper education in youth, when the consolations of religion and a future life of compensation are swept away, is one of the chief causes of four of the most outstanding psychological phenomena of our times: first, the increase in crime, second, the increase of suicide, third, the increase of insanity, and fourth, the increase of social unrest.

Now, the inescapable question which western civilization faces even in the opinions of many of these philosophers themselves, is this: "What is the man in the street—John Smith—going to do when he wakes up to what they at least believe are the facts?" When Smith finds out, for instance, that life is as George Santayana puts it, "a little luminous meteor in an infinite abyss of nothingness, a rocket fired on a dark night," a fleeting moment of music, warmth and color between two eternities of silence, what is he going to do about it? Or, what would happen if Smith, himself, should turn philosopher? Philosophy is the highest effort of man to find reality and adjust himself to it—to teach himself what to do with the universe. And if he, Smith, finds out that the universe is not remotely built in his interest, how is he going to make that adjustment? What is he going to do with that sort of a universe?

The philosophers themselves say candidly they

do not know. They express only hopes, suggestions and even despairs. For ages, Smith has faced the hardships of life, its glaring social injustices, its bitter pains and disappointments, "the slings and arrows of outrageous fortune," either because of or at least along with the comforting assurance given him by his intellectual superiors of "something after death," another world where he, too, would come in for some of the prizes of life, where he, too, would walk streets of gold and dwell in "mansions not made with hands."

Now, if Smith, as a laboring man, for instance, finds this is all pure fol-de-rol, is he going to go on living out docilely his little round of life on black bread, beans and onions, and let himself be exploited for the benefit of a few biologically selected specimens of protoplasmic mechanism, who (or perhaps the mechanist would say which) a purely mechanical, selective process has determined are his "superiors"; mechanisms in whom, (or, perhaps the mechanist again would say, in which) he has no interest and who, from the nature of the case, can have only a lifetime interest in him? Will he, as Santayana subtly argues, calmly accept the fact that it is only in the light of death—this eternal death—that we can value life truly, and that only "the dark background which death supplies can bring out the tender colors of life in all their purity"? Will he not say this is simply more esoteric fol-de-rol thrown out by the esoteric circle to fool him into docility and exploitations?

Plainly, in all this literature, there are grounds for a real concern for civilization. It might lose its spiritual driving power. The philosophical dilemma can not be answered (and the answer comfortably quoted by either the churches or the common man, or by the spiritualistic philosopher) with the nonchalant statement which up to a generation ago did duty in bringing confusion into the scientific camp: "You are not philosophers or you would know of inner realities of experience which your instruments can not find." Nor can the dilemma be met by the retort of scientific men: "You are not scientists, or you would know that science does bring us the most serviceable concepts of reality to which the human mind has attained, or probably ever will attain." In this past generation many scientists have become philosophers and nearly all philosophers have been trained in science and, as never before, all are turning their eyes earnestly upon the effects of their philosophies on social and political problems. We can not escape from the fact that these effects are going to be immense and permanent.

It is, therefore, not the philosophical, but the ethical, social and political dilemmas that now concern us. Should a philosophy of naturalism, or any sort of free-thinking pragmatism, lay hold of the masses, and become a commonplace in Smith's education, especially the education of his children, several things, it seems obvious to me, are bound to happen. Some of them may happen to one section

of the population and some to another. But it is fairly likely that there will be a great major trend in some particular direction, and to influence that trend is, plainly, the duty of any renaissance—indeed, its chief political and social objective. To rouse and bring about a renaissance by talking, writing, thinking—spreading propaganda about it, if you will—is evidently every thinking man's highest present-day opportunity for social service. A renaissance is clearly not a matter for mere intellectual curiosity on the part of a few. It is a matter of supreme necessity to save the social order from the possibility that its cohesive forces may let go in general anarchy.

The dullest mind, Your Excellency, must see that if the naturalistic philosophy or any philosophy without a personal God—heaven, immortality and supernaturalism—in it, takes possession of the man in the street, if Smith becomes convinced that this life is really all, that this is his last and only chance at it, that he will react largely *as he is educated to react,* and that, consequently, it is at this precise point that education must make its chief attack, in order to adjust his mind to such a radically changed world, give satisfactions to his heart as well as his head, and give him new grounds for hope and courage. For if hope and courage go out of the lives of common men it is all up with social and political civilization.

One of four trends, I think, is certain to sweep over the minds of men. They may all be present

and overlap but some one of them, I believe, will rise supreme, and give color, life and character to the age.

First, men may espouse a vulgar Epicureanism, mixed with stoicism. Smith may argue that since death ends all, and the universe is not concerned with him personally, with ethical values or human personalities, then let us eat, drink and be merry; and he may seek in rank and crass sensationalism—the mere satisfaction of his senses—the solution of life, and the escape from its dilemmas.

Second, Smith may plunge into social and political revolution, seeking to grab whatever he may of the values which a more sober human order has created, a social and moral Bolshevism, which recognizes no values in leadership or social order and whose motto shall be, "Let the Devil take the hindmost." Obviously, such a result will plunge the world into a new Dark Ages of superstition and dogmatic faith. The Fundamentalist movement is the chief force, in my judgment, to-day trending toward just such a denouement.

Third, men may go in for a more passionate estheticism, a worship of beauty for its own sake, the losing of life in a higher Epicureanism, a higher sensationalism; the living of life for its higher emotional values, without—in Smith's mind, at least—an ethical philosophy or an intellectual background. It is perhaps only those who have felt the depth, insistence and permanence of the esthetic appeal, as one finds it in Schopenhauer, or still wider

and deeper in Benedetto Croce, who will feel that such a passion might become the dominating note in a truly great civilization.

Fourth, it may result in a new and higher synthesis resulting in a true liberalism, a true freeing of the human spirit, a genuinely noble esthetic and spiritual release, coupled with a deeper devotion to the social and political good as the only way to attain the highest, widest and deepest experience of this brief fever of living, loving and dying. It might result in an organization of society and politics not such as mechanized industry has given us for power, pleasure and profit, but for human values, a development of all that is unique, free and truly wonderful in the personality and spirit of each man and woman; an organization of society for the participation of every man and woman and little child in the ever-accumulating treasure of the one common life. It may give us a civilization not of power but of values, a civilization of beauty, gaiety and happiness; of social tenderness, sweetness and gentility; of intellectual and spiritual adventure, such as did characterize the old Renaissance and "the most high and palmy state of Rome" and Greece, and those other few precious moments of history when society thought of men as persons and not as masses.

It is the latter conception to which any renaissance of western civilization, which Glenn Frank and some Italian and English thinkers believe is approaching, must address itself. While I have spoken

of the literature of naturalism, or any open view of life and the universe, as being a literature of despair, I have done so merely because that is the *first* reaction of the man who has been schooled in supernaturalism. Because he has not learned a new courage, and seen new objectives and sources of comfort and inspiration, greater than those of his old armchair world; because he has not completely oriented himself in this new and, as the philosophers believe, far happier world, and one more fruitful in nourishing experience, he sees in it nothing but blackness and horror. He is not able all at once to stand what John Burroughs called the "cosmic chill." As Martin puts it, he can not, without a more rational education, stand a universe without the supernatural—without a Heavenly Father who rewards him when he is good, and a Devil who punishes him when he is bad. It is a grave question, indeed, if men, without further schooling, can stand a universe without a Devil in it. Men want a super-universe, peopled with anthropomorphic personalities, to lean upon, one which with its Devil accounts for evil, and yet one which they can make friendly to their personal interests by good deeds, sacrifice and special pleading. If they wake up to find this swept away, plainly it is the task of any renaissance to teach them to build an endurable universe out of the materials which naturalism teaches them is their only home.

That universe, if it brings men a courageous self-reliance instead of a reliance upon some superworld must be one of finer human relationships,

deeper human insights, wiser industrial and social organization, richer human goods and higher ethical values than any which men have ever before constructed. If there is to be no home in some future realm where the ills of this one are to be righted, and men live happily forever, they will either go into a moral and spiritual smash-up, or else do what plain common sense would dictate, set about at once building for themselves, and with their own hands, finer, richer and more stately mansions for their souls in this.

If one has the patience and wit to think his way through the mechanistic or any realistic interpretation of the universe, whether he espouses it or not, he will find that it is not necessarily a philosophy of despair, but one of profound constructive hope for a happy life in the here and now, with little concern for what may happen when the pulses are stilled. He will find that it is a philosophy which can light this present world with new meanings, which can thrill the human spirit with a new and flaming gaiety, and which can motivate man's whole being with a deeper sense of obligation to the social good.

The supremest challenge to-day to every religion and philosophy of supernaturalism is whether they have not led men not to morality but to immorality, especially to social and political immorality. It is a grave question, in my mind, whether, when men believe there is another world where things will all come out right, if it does not, to put it plainly, cause them to lie down on the job of *making*

them come out right in this. Supernaturalism teaches the forgiveness of sins. It has never attempted even to orient men at all in any sound social or political ethics, or endeavored to teach them what sort of *social and political* conduct would land them in Heaven, or what sort would land them in Hell. Supernatural salvation may make men neglect a natural salvation. It is personal, and we hear no thunderings from Sinai that bad sewage, poor schools, unventilated factories, chaotic social organization, political inefficiency, especially international ethical chaos, would land men in perdition who permit themselves to live under such social wickedness. But science knows no forgiveness of sins. It knows only the law of cause and effect. Man's social sins at least can not be held in escrow for future evaluation. They are punished here and now. Social justice is its own heaven and social chaos its own hell. The ethics of science is on the all or none principle. Certainly, no philosophy has offered stronger or more immediate and concrete ethical sanctions or commands for men to be good than naturalism. But it is a grave question whether supernaturalism does not make men immoral. It is certainly debatable whether it does not make them utterly careless of the social good, and endure ills they would not if they did not have in their mental pictures of the universe, another world—a wish-fancy world of escape. And it may be that the mechanistic philosophy, which teaches that we are all in the same boat drifting across seas which sci-

ence and intelligence alone can chart, would make men feel as no other religion can make them feel, that they are literally their brother's keeper, wholly and personally responsible for developing a social and political order, which will bring life's richest values to all.

Whether we espouse a purely naturalistic conception of the world, or one more filled with the warmth of the spirit, science has given us a picture wholly different from the old one. And it is one in which men must seek new consolations and in which it is open to them to find much richer values. If any sort of natural picture of the world be true, then the wider personal experience, the richer ethical adjustments, the truer estheticism, in short, a happy liveableness of life, can only be attained through those varied and opulent experiences, which are possible only in a soundly adjusted social order; a truly democratic industry, without the shams of political democracy; a political aristo-democracy whose objective is to increase the dignity and worth of men as human beings, each of whom is regarded as a distinct and unique creator and determiner of the only real values there are—the values of the human spirit. There to my mind is the challenge of any renaissance. That is squarely your problem and mine, Your Excellency, and of all men who wish to think straight, hopefully and helpfully in this coming time. The challenge is clear and simple. Can the materials of a spiritual and intellectual renaissance, which have come up out of the labora-

tories of science, be welded and synthesized into a joyous, stimulating, dynamic philosophy of life which enables men to live by a clear light of reason, which illuminates and guides their emotions, instead of groping, as the masses have always done, in the blind darkness of dogmatic faith.

It is this which I think lay in the mind of Dean Inge of London, described as "The gloomy Dean," although he may turn out to be the most hopeful man in England, when he said: "The spiritual integration of society which we desire and behold afar off, must be illuminated by the dry light of science, and warmed by the rays of idealism, a white light but not cold. And idealism must be compacted as a religion, for it is the function of religion to prevent the fruits of the flowering times of the spirit from being lost." This is or can be made a great flowering time of the human spirit. And if religion can not function so as to preserve it, then its way is lost. It has failed mankind in his supremest hour because of its failure to base its faith upon knowledge and found its idealism in the world of the real—a real which science has at last taught man is not his enemy, but the answering echo of the deepest voices of his soul.

Plainly then, to educate men into a new sort of life consonant with the spirit of science, touched with its excitements and lighted with its new idealisms is the highest individual duty, and the most pressing social and political problem in the world to-day. It is the highest privilege, and, by all means,

the highest duty which has come both to the philosopher and the educator. For, if philosophy and education can not rush to the rescue, and show to the untutored man a truer, wiser and larger way to live in this new world of science; if they can not show him how to be a truly good man and a truly happy man in a natural world, then civilization is indeed in danger. It is endangered not from the stupidity, ignorance and unreasoning revolt of the underman, as the biological, psychological, economic, industrial and administrative fears, of which we have heard, have pictured, but from his clear perception that the highest intellectual triumphs of man have failed to give him any sound or satisfying reason for living at all.

Is it not as John Dewey asks in another connection, "the intellectual task of the twentieth century to take this last step?" Is not this the intellectual task of a renaissance, the one task of thoughtful men in the world to-day? For as Dewey continues, when the old, fiat-created, closed world of dogmas and metaphysics has given place to the new conception of a world of flux and change, and this new conception has become "at home in moral and social life"; "when this step is taken the circle of scientific development will be rounded out, and the reconstruction of philosophy (and I might add the reconstruction of social and political science) be made an accomplished fact."

# THE ETHICAL OUTLOOK

## The Mental Habits for a New Approach

I have thus, Your Excellency, laid before you the stern warnings and high commands which I believe it is the duty and privilege of the scientist, especially the biologist, in this day and age to utter. Scientists may find many errors in detail, but I believe all will agree with the spirit. "Human speech," in the fine phrase of Flaubert, "is like a cracked tin kettle, on which we hammer out tunes to make bears dance when we long to move the stars." But I believe, with all the multitudinous tongues with which science to-day is calling, you will heed its voices. Your goodness of heart is too great, your common sense too sound, for you not to see that they speak a larger humanitarianism and a truer basis of social permanence than the mere instinctive passions and impulsive trends which, heretofore, have furnished nearly the whole dynamic of both organic and social evolution. They call for no change in human nature, no revolution in social structure, no destruction of the great administrative agencies of government and society which men, through toil and blood, have already established. They can not be labeled radical nor conservative, but only constructivist. They involve but one change in social habits—the use of intelligence.

The world is too big, too complex, its interests too precious for it longer to be the plaything of either bandits or dilettantes. As nations have ceased to be the toys of kings, so social destiny must cease to be a mere pawn on the chess-board of ignorance. The common sense that sufficed for simpler times is no longer equal to the affairs of a planet. Science has thrown us into planetary days, and we face it with a provincial politics and a town meeting morals. Men must train for larger days; must train their intellects and expand their imaginations to meet this "new variety of untried being." In fact what men need is not some solemn brochure such as this, but some ethical Cervantes who, with Gargantuan mirth, will laugh our social and political morals off the world's stage; some super-Don Quixote who will personify, in his windmill tilting, our mystical, unreal, impractical, unhuman, symbolical, wish-fancy ethics as being as comically out of date as Feudalism sitting on a keg of gunpowder. It is no figure of speech but a solemn reality, that this electrical, gunpowder age may explode if we do not quickly develop the social technique to grasp and extinguish the thousand lighted fuses that are rapidly burning their ways toward its central magazines.

For society is suffering primarily not from unbalanced budgets and disrupted ententes but from wrong mental processes. Many of these processes have become institutions; for institutions, as Martin says, are simply stereotyped social habits. Con-

sequently, the way men think is the thing that makes right or wrong, wise or foolish institutions. And there are ten great wrong mental processes—some of them age-old institutions—which prevent the inner life of men from expanding to meet the new needs, and prevent them from breathing the spacious airs of a new spiritual morning with which science is ready to light the world. These mental habits are not called evils because they lie so far behind our obvious evils that they are not discerned. They do not make good newspaper head-lines. Juries and investigating committees never list them as the "causes" of social breakdown because the juries and committees are themselves caught up in the same network of habit. But until they are observed and corrected, society can never become intelligent. And until society becomes intelligent it can never be happy or free.

First, is the very, very few people in the world who can think. Wrong mental habits have led the race to breed but a few of these per thousand or million of its population. Yet human destiny is in the hands of these few, and they could, by right mental habits in the race, be multiplied a thousandfold.

Second, is the enormous number of people who can not think, but who think they can think, and who mistake their mystical half-knowledge for social wisdom and *act upon it.*

Third, is the unwillingness of those who can not think to trust those who can.

Fourth, the very few people who know when to

refuse intelligently to think, and to employ the man who knows—the expert—to think for them. Thorndike believes one unfailing test of an educated man is that "he knows when not to think and where to buy the thinking he needs."

Fifth, the vast numbers of people who think only in crowd terms—in slogans and "solving words," who believe that we can exorcise the evil spirits of society by pronouncing unctuously enough, with proper flag-waving and hundred percentism, some formula of social regeneration.

Sixth, the presence among us of an unconscionable number of special salesmen—professional propagandists for good causes—trained up to the minute in selling us some social, spiritual, economic or political nostrum, all the way from Security Leagues, Fundamentalism and Holy Rollerism to Democracy, Christianity*, Marxism or the Greek spirit. Not a single one of these but denies the use of free intelligence and the analytical approach in solving social dilemmas.

Seventh, the fact that in both social and political organization science—the use of the trained analytical intelligence—is not represented in government but is controlled by government. As a result, social organization is trying to control science without being scientific itself. Science must become organic

*Note that I am speaking of Christianity and not of the religion of Jesus—two entirely different things, as Glenn Frank has brilliantly argued. If the religion of Jesus laid hold of men it might bring the millennium.

in social control instead of being a thing outside for social control to amuse itself with.

Eighth, that government and social control are in the hands of expert politicians who have power, instead of expert technologists who have wisdom. There should be technologists in control of every field of human need and desire—in politics, business, industry, education, religion, ethics, philosophy, charity, law, health, labor, employment; above all, in sociology, which is simply the application of all the sciences to human life and destiny. At present, educational, social and political government is almost wholly in the hands of business men who "know their business," but who do not, in any modern sense, know the science of society, and, above all, who do not conceive it to be their one supreme function as social agents to aid men in creating such a science. It is only as we gain a true science of society that business itself will eliminate its ghastly wastes and attain its enormous possible profits.

It is the latter two mental habits which prevent the governments of the world from promoting a great international non-governmental institute, as suggested by Alleyne Ireland, for the objective and comparative study and analysis of their own forms and function, and the consequent setting up between nations of mutual rivalry in the promotion of human welfare instead of armaments—that government being the "best" which, upon purely objective analysis, succeeds most fully in attaining the one sole object of human beings having government at all,

namely, the welfare and racial progress of its people. As it is, nobody knows what the effects of government really are, nor what they could be.

Ninth, the failure of education, especially primary, high school and college education—largely owing to the dominance of the previously mentioned forces—to teach our children the truth that sets them free. Oh, for a Socrates, a Seneca, a Pasteur, a Huxley, a Nietzsche, a Jesus, in every nursery and schoolroom! They were no different from common men except that they thought straight and out loud. We can never have them everywhere, for there are not enough such people alive at any one time; but we can have fathers, mothers and teachers who are possessed with their spirit—their defiance of authority, their surrender to reality and their willingness to face it.

Tenth, the lack throughout all society of a vast number of *unambitious* men—a thousand times more than we have now—men whose lives are devoted not to profits but to values, not money but life—men like Buddha, Socrates, and Seneca, Voltaire, Nietzsche and Jesus; like Clerk-Maxwell, Darwin, and Henri Poincaré, Mendel, Galton and Faraday: like Pearson, Thorndike, Shaffer, Bateson, Morgan, Pearl, Woods, Bidwell Wilson, Cattell, Giddings, Spaulding, Kallen, Martin, Robinson, Dewey—these, and that great "white company" of the world's aristocrats, whose free and brave intellects have followed reality, though it lead them to hell, and who, as a consequence, have given us com-

mon men nearly all that is worth living for, fighting for or dying for.

To fill the world with the spirit of these men and the two methods, the humanistic and scientific, by which they attained truth, is the hope of the world, and its only hope. Eugenics never dreams of endowing a race with their super-intelligence, but it can endow a race with their faith in intelligence and their high scorn of "wishful thinking." Wishful thinking has brought the world nearly all its sorrow, the clarity of ordered thinking has brought it nearly all its joy.

To make the things of which I have spoken—this New Decalogue of Science—the living drive and dynamic of society but one revolution, then, is necessary—a revolution in education; not a revolution in the mere methods of teaching—that is already in the hands of experts. But there must be a revolution in what is taught. The age demands—our youth demand—an education freighted with a new set of values by which and for which to live. Men have lived at different times for different things. A booted cavalier and Daniel in the lions' den lived for totally different psychological meanings. And in our day our youth must be taught to live for those new things—those sustaining ardors, copious communions and opulent enchantments of the spirit, for which the scientist and philosopher live. They must be taught to feel the "raptured sweetness" of their nourishing freedom, with all its critical insights, its keen edge of discovery and the urging call

of its mysteries that forever beckon them on. For there have been rare and crystal days of the world, such as the eighteenth century, the Renaissance, the brief hour of Grecian bloom, when men have dared with their minds, adventured with their spirits, and let their souls frankly listen to the "lyric legions" of those seductive voices, with which Life, in those sunny days, sang, intrigued and charmed.

In plain blunt truth we must cease lying to our youth—lying to them as we do from the cradle up, about truth and life—about character, morals, money, ambition, art, Heaven, religion, amusement, happiness and God. Both honesty and intelligence must be used or they will soon be lost. We must take our children into the genuine secrets of life and reality. We teach them to experiment fearlessly in chemistry, physics, biology and even in psychology, upon their own mental operations, but we begin lying to them about life the moment they leave the laboratory. It truly seems to-day as if the whole world were in a secret conspiracy to deceive childhood. Here they are, pouring by the millions through our schools, brave, wide-eyed, clean, unspoiled, ready to do and dare with the universe; their pulses tumbling with as rich idealisms as ever set the blood of a happy warrior singing upon a great enterprise. We instantly close these open minds and teach them to belong to parties, to evaluate life in creeds, to express social power in catchwords, to compress vast ardors into conventional molds, to follow whatever spiritual goose-step suits

best the vested religious, economic and political interests of the time. We build confessions of faith, and defense mechanisms between them and life. In fact they learn everything except something direct, honest and real about life. They learn everything about the universe except what to do with it. We do not teach them to think life, or the universe, or any social problem through. Only those few fortunate youths who come under the teachings of the few great masters in our universities, who are not thrown out for their honesty, or those rare children who, like John Stuart Mill, have a father or mother who is not afraid of the free mind of a child—only these few ever find out what life is, or could be, or ought to be.

If you doubt this go into any community—except some great city where sometimes a freed mind can, for a time at least, escape the police—and find, as you often will, some shoemaker, machinist, lawyer, doctor—never a preacher for he would be discovered and thrown out—who thinks about life or God or political parties with the same free intelligence with which he thinks about his business or craft, and you find him feared and ostracized. He is used in Sunday-school as a horrible example to frighten children into the truth. It is bruited in terrified whispers that he is a free-thinker—the one thing under heaven among men that we need to-day the most—or that he even reads Tom Paine, or doubts the miracles. Children are taught to wonder why the curse of God does not descend

upon him—the only explanation being that God must be saving him for some purpose. The town drunkard is looked upon as a fit subject for prayer and forgiveness, but this man lies beyond the divine pale. There is no hope for him because he defies God.

He may be and often is the sweetest, gentlest soul in the community, fine-mannered, neighborly, tolerant and just. But his very tolerance is his undoing. He does not hate as he should. He really doesn't know whether he is a Baptist, Presbyterian, or Catholic, Jew or Gentile, Democrat or Republican. He thinks about social problems and life instead of about these things. This keeps him from hating. Instead of hating he lives. Crowds always hate. They are organized for the purpose of hating wholesale instead of retail. Each hater thus gains the moral support of his fellow haters. The Kaiser had his crowd of moral supporters; the Allies had theirs. The war was a clash of two brands of moral hate supporters. Crowds clothe hate with holy unction and invest it with ritual. They elevate it into a religion and suffuse it with art. If they did not they would instantly dissolve, and tolerance, straightway, would perfume the air. For this reason tolerance is poison gas to crowds. They constantly wear their gas-masks to forefend its deadly fumes. Consequently the freed man fares nearly as badly in this age of light and liberty as he did in the Dark Ages. He is merely kept out of a job instead of being burned. That is some gain.

People to-day put in sewers and trolley cars by free-thinking. That is also some gain. But the refusal to face life, God, political ethics and industrial morals with the same unfettered intelligence is the one sleepless enemy against the entrance of the world into a great age of idealistic-realism, where men could find the endless values of liberty, and where the humblest man could literally walk and talk with God.

How, then, can we expect intelligent social action when people will not use intelligence or trust it when it offers its ministry? The ten mental processes, however, which I have named, are all that stand in the way. And they can be changed by education. Education does change people. It causes them to live for different things. The white light of idealism must be made to shine upon the face of reality. And when it does, reality will be found to be not a grim, forbidding monster with which to frighten children and keep them frightened till they die. Reality will be found to be what the scientist knows it is, a "high-born kinsman" of our own. In its highest reaches, it meets the ideal. The two are found to be different aspects of experience. Their reconciliation, their evaluation, their proportionate emphasis, as Dewey says, "is the standing problem of life." It is this conflict between the real and the ideal which gives life its edge, its worthwhileness, its perspective. But when children and youth are taught to shun the real, to fear it, to live in a realm of wish-fancies, defense mechanisms, unrealities,

superstitions and symbolisms; when they are hypnotized by education into an intellectual catalepsy, we can never set life before them in any ordered fashion, nor approach social problems with any just perspective. Idealism loses all its force and meaning when expended upon unrealities. I repeat, Your Excellency, that it is not, primarily, the obvious ills from which the world is suffering which constitute the tragedy of this age, but the wrong mental habits with which people meet life and try to solve its endless dilemmas. Science, experiment, analysis, free-thinking, the play of unfettered intelligence in the place of dogmas, creeds, solving words, and social and political rituals, all of which are merely petrified thinking, these and these alone offer the only hope of a sunnier and sweeter day for men and women and little children to live in.

In closing these comments upon statesmanship and life may I express the earnest hope that they have brought you at times deep and lasting pain—pain such as that keen social diagnostician, Bagehot, spoke of when he said, "the keenest pain known to human nature is the pain of a new idea." The writer has failed if he has not communicated to you the same deep mental anguish with which he, himself, has attained to something at least of this critical attitude toward life, and the spiritual release of having accepted the universe as it appears to the open, and, I trust, constantly opening mind.

You and I were taught in boyhood that this world is a vale of tears, that God was to be feared,

that human nature was depraved, and that our only hope lay in some specious "faith" in a particular "scheme of salvation." How enchantingly far away that all seems to a man who has attained the only salvation there is or can be—the salvation of intellectual freedom. And I believe that the same scheme of intellectual redemption is spreading throughout the world. Here and there a new lamp is being lighted—a tiny light it may be, but it helps to illuminate the way to social salvation. Some tolerant man somewhere, who, when the hour for real fighting and real hating comes, is found to be an unloosed Fury, thinks of a better way of doing social things, and is able to persuade a few neighbors to fall in, and straightway the world has moved a little forward.

For instance, over in Cincinnati some one thought of something called a "Social Unit," not a revolution nor a cooperative commonwealth nor a Utopia —just a little more efficient way of acting toward one's neighbors—described as "something friendly that helps," "a new social practise and attitude," "an extension of democracy beyond the ballot box," an attitude that "you are as good as I am instead of the usual attitude that I am as good as you are." This is an important social discovery. If it extends, it will wreck every crowd in the world. Down at Stanton, Virginia, a young man named Richard Childs thought of a new way of governing cities. It was later extended to Dayton, Ohio. He is now extending it to governing counties. He may ex-

tend it to governing nations. No telling what will happen when a young man gets to thinking. But the world is another step forward. In Chicago, Chief Justice Olson got down off his bench and went into a laboratory and studied biology and psychology in order to understand the criminals he was hanging. He began with *Drosophila* flies and guinea pigs, for "the proper study of mankind is *Drosophila*" and guinea pigs. As a result the world's airs are a bit finer, more fragrant, more invigorating. By just that much this world ceases to be a vale of tears, and becomes a "haven of joy" which we were taught was only in some other world.

And so it goes, and always has, and always will. Some unambitious man has broken away from the crowd and given men all there is to be ambitious for. Their numbers are increasing. And they are speaking more and more through the voice of science. I believe you will heed them. Your endless charities, your boundless altruisms, your ambitious schemes to educate everybody, your insatiate cry for more democracy, gives me an abiding faith that you will in the end accept a charity that saves life, an education that frees life, a democracy that articulates, galvanizes and promotes life. But back of it all, at the bottom of it all, as the biologist views it, lies the integrity of the racial blood. No ethics, religion, art, democracy, idealism, philosophy, or any other dream of man can long succeed unless blood currents of the race be kept rich, regnant and alive. And here again this all depends upon men's

mental habits and the ethics, religion and philosophy which come out of them. The scheme of redemption the world most needs is the break-up of its mental habits, and the turning of its mental and spiritual processes into those free open channels which experimental science, critical analysis of natural forces, and a free philosophy of a natural universe has taught the scientist how to teach to men.

But in our tolerance of intolerance and intolerance of tolerance the statesman, the common man—all of us have been caught up in a vast network of habits that are hard to break. But they are slowly breaking. When they do the Kingdom of Heaven will be found to have come without observation. And the world-ethics that comes with a freed spirit will extend that kingdom on earth as in Heaven. But in our narrow nationalism and our ephemeral schemes of merely environmental reform, we have forgotten two individuals—our geographic neighbor on the other side of the world and our biological brother of the unborn to-morrow. And all history is witness that if we forget either one, our civilization, like all others, will run a brief course of meteoric splendor and pass away into the trackless void. So far we have thought only to leave the men of our own time and our own tribe a material and cultural legacy, instead of also bequeathing to all men of all time the biologic legacy of strong bodies and great souls.

For, finally, Your Excellency, if our social orders are to endure, and be sufficient unto the salva-

tion not of a few but of all men—the salvation of men to the sustaining splendor, the "divine completeness" of an open world of intellectual and spiritual liberty—then the ethics of the microscope and the chemist's test tube, the religion of the mathematician's honesty and rigidity of logical process; the philosophy of "intelligently thought-out possibilities of this existent world which may be used as methods for making over and improving it"; in short, the completed Judaism, Buddhism, Confucianism, Islamism, Christianity of science, must become the dominating, informing spirit of society and the State. Our morality, religion and education; our industrial, economic, social and political ethics, and the statesmanship that derives from them must, like the mercy of God, take on the wideness, openness and power of the sea, the variability, adaptability and eternity of protoplasm, and the honesty, gaiety and tolerance of the sunshine.

THE END

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